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1958.

QUEENSLAND.

ANNUAL REPORT

OF THE

HEALTH AND MEDICAL SERVICES

OF THE

STATE OF QUEENSLAND

FOR THE

YEAR 1957-58.

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ANNUAL REPORT OF THE DIRECTOR-GENERAL OF HEALTH AND MEDICAL SERVICES,

1957-58.

The Honourable the Minister for Health and Home Affairs.

SIR,—I have the honour to submit for your information the Annual Report of the Health and Medical Services Branch of the Department of Health and Home Affairs during the year ended 30th June, 1958.

ABRAHAM FRYBERG,
M.B., B.S. (Melb.), D.P.H., D.T.M. (Syd.),
Director-General of Health and
Medical Services.

STAFF.

Mr. T. O'Shea, M.R.San.I., retired as Secretary to the Director-General and Mr. R. Woodley was appointed in his stead. Mr. O'Shea joined the Department in 1908 and, except when he was overseas during the First World War, has given continuous service since then. Mr. O'Shea has seen the Department develop to its present status and his knowledge of its early history was most valuable. He at all times proved himself a loyal and competent officer.

The Welfare Officer, Mrs. Wills, retired in May. She proved herself a capable officer and her kindliness will be remembered by many people whom she assisted in this State.

Dr. J. A. Hede was appointed Psychiatrist at the Psychiatry Clinic, Brisbane, and Dr. R. A. Atherton was appointed in his place as Medical Superintendent, Ipswich Mental Hospital.

Dr. G. Howells was appointed as Chest Physician, Toowoomba.

INTRODUCTORY REMARKS.

Vital Statistics.

Since 1900 the expectation of life has increased by fifteen years, the latest available figures being males 66·07 years, females 70·63 years. This has been brought about by improved hygiene and the progress of medical science, particularly the discovery of antibiotics. In 1911, one year after the introduction of the old age pension, the population of Queensland was 605,813 with 22,463 or 3.7 per cent. over 65 years. In 1957, the population of the State was 1,396,740 with 103,932 or 7.44 per cent. over 65 years, with an increasing number of persons each year over 75 years of age.

The percentage of the population over 65 would be much higher if it were not for the fact that post-war migrants were practically all under the age of 65 years.

This increase in aged individuals in the community presents social, economic and medical problems. There is a shortage of houses; the cost of building has resulted in smaller homes; home help is difficult to obtain; and both husband and wife going to work has resulted in children being unable to look after aged parents. To this, add the re-adjustment of the retired worker to his new economic conditions and the chronic illnesses which beset old people and it will be realised that although we have added years to life we still have to add life to years.

The problem of the aged is receiving serious consideration in all countries which I visited this year. Loneliness and lack of companionship are the biggest disabilities and are being overcome by day centres where the old folk go daily during the week. Here they take part in various recreational activities and in some were attached sheltered workshops where simple tasks, for which payment was made to the members, are carried out for a few hours during the day.

Elderly people are more likely to become subject to chronic illness than the younger age groups. Although basically the disease which affects them has the same symptoms as in a younger person, the course it runs is often different because of changes in the tissues due to aging. There is a difference of opinion whether these old folk should be nursed in a ward with younger patients but the consensus of opinion is they should be separated, particularly after the acute phase of the illness has passed.

Most old people are independent and for those who do not require care for the full 24 hours, day hospitals have been provided and home helps and district nurses visit the patient's home when required. A programme for the aged will be submitted for consideration later in the year.

Malignant Neoplasms (*Cancer*).—This is, next to the diseases of the circulatory system, the greatest cause of death in the State.

Improved methods of diagnosis and education of the medical profession have been responsible for the diagnosis of some forms of cancer at a stage at which they are operable while the Queensland Health Education Council has played an active part in the education of the public in regard to the early signs of the disease.

Research is being carried out throughout the world into the cause of cancer but, apart from malignancies caused by chemical agencies, little success has been achieved.

"The Food and Drug Regulations of 1957" give a list of permitted food colours. Many food colours which were suspected of being carcinogenic have been deleted and no new colours will be added until the Food Additives Committee of the National Health and Medical Research Council is satisfied they are not likely to cause malignancies.

Cancer of the lung has shown a definite increase in incidence. Two factors thought to be predisposing causes are excessive smoking and air pollution. Investigations have been commenced in regard to "smog" in Brisbane; the remedy for smoking lies in the individual's own hands. Some theatres do not allow smoking; it would be wise if, for no other reason than hygiene, others followed suit.

Queensland with its relatively high incidence of skin cancer presents an excellent opportunity for research into this condition. The University of Queensland in co-operation with the Queensland Radium Institute has commenced research into the cause of this condition.

COMMUNICABLE DISEASES.

The immunisation of children in the age group six months to 14 years inclusive with Salk vaccine which commenced last year when two injections at least were given was continued and all children whose parents desired to have them immunised completed the course of immunisation by 30th June.

Since the campaign commenced in 1956, 345,476 children have been fully immunised while a total of 1,181,976 injections have been given.

The campaign has been most successful both in numbers and the apparent protection given. Only one case of proven poliomyelitis occurred, the patient, a migrant, being infected before her arrival in Queensland. Although it is still too early to say that Salk vaccine is the complete answer to poliomyelitis, from the results obtained throughout the world, following its use as an immunising procedure, it appears that the protection conferred is the answer to epidemic poliomyelitis.

Vaccination is now available for adults up to the age of 44 through the Department or Local Authority and it is hoped the response in adults will equal that of children under the age of 15.

Diphtheria.—Only one death occurred from diphtheria and although 16 notifications for this disease were received for the calendar year 1957 most cases occurred in the first half of the year. The notifications for Brisbane for the year 1957-58 were 2 as against 3 the previous year while in the extra-metropolitan area there were 4 notifications received this year as against 16 the previous financial year. Deaths and notifications from diphtheria have never been lower and this position is due to immunisation against this disease. Parents or Local Authorities must not be allowed to be lulled ito a sense of false security. If immunisation of children at the age of four months is not kept at its present high level the incidence and mortality from diphtheria will surely increase.

With the speeding up of ships the possibility of a person arriving in Queensland incubating smallpox is real. It is, therefore, pleasing to see that the Commonwealth Health Department accepted the recommendation of the National Health and Medical Research Council that travellers entering Australia, whether by sea or air, must present a current vaccination certificate. Vaccination is the main method of defence against smallpox and every infant should be vaccinated because the reaction is mild at that age and if revaccination is necesary in an emergency in later life there is little inconvenience caused to those adults being immunised.

HANSEN'S DISEASE.

In 1950 I recommended that patients be released from isolation after twelve successive negative smears taken at monthly intervals. At that time there were 54 patients at Peel Island and 78 patients at Fantome Island. As a result of treatment with sulphone drugs the numbers of patients now receiving active treatment are 16 at Peel Island and 26 at Fantome Island. Only two patients have relapsed since the use of sulphone drugs in 1947 and in each instance this was due to the failure of the patient to continue the treatment recommended on discharge.

Hansen's Disease is of low communicability and has a long incubation period. Like tuberculosis, it is the unknown case which is mainly responsible for the spread of disease, this probably taking place during the incubation period when the disease has not been diagnosed because symptoms have not appeared. Once the diagnosis has been established the patient is taught personal hygiene.

During my recent visit overseas I discussed the question of isolation of patients with leading leprologists in the countries I visited and all agreed that providing a patient continued taking sulphone drugs there was little likelihood of a relapse if he were discharged after three successive negative smears taken at monthly intervals.

Two new drugs which are reputed to be highly effective in reducing bacillary counts in Hansen's Disease will soon be available and supplies have been promised for the use of Hansen's Disease patients in Queensland.

DIVISION OF FOOD AND DRUGS.

In the past, standards for and labelling of food products varied in the different States.

"The Food and Drug Regulations of 1957" have introduced new standards to meet modern conditions. They are the result of over two years of investigation and discussions between representatives of the States and the Commonwealth Health Departments and if accepted by all States should result in uniform control throughout Australia.

"The Health (Food Hygiene) Regulations of 1957" lay down requirements in respect to the hygienic handling of food and the construction of premises where food is sold at retail level.

The Local Authority is charged with the implementation of the Regulations and they should result in a higher standard of food hygiene throughout the State.

The Milk Sellers Regulations were also redrafted and brought into line with modern advances in milk production. Milk is one of the most dangerous of foodstuffs but pasteurisation will destroy all pathogenic organisms. It must not be the means of making dirty milk apparently clean so supervision during all stages of production is necessary to ensure a clean milk before pasteurisation.

ENVIRONMENTAL SANITATION.

Typhoid fever today is an uncommon disease and no greater contribution has been made to the prevention of this and other intestinal infections than that of the health inspector. Officers of this Division act in an advisory capacity carrying out field work in co-operation with the Local Authority inspector. Some Local Authorities are health conscious, sending their inspectors to the Annual Conference of Health Inspectors at which they undertake an intensive course of study. Others, however, fail to realise the value of preventive medicine no doubt because the work carried out by the inspector does not catch the public eye. Many inspectors are to blame for this as they have not progressed with the newer conception of public health.

DIVISION OF TUBERCULOSIS.

It will be seen the percentage of children who were tuberculin positive in some cities where school children have been tested is higher than average. In Cairns 87.5 per cent. of boys in the 16 years age group are tuberculin positive. This implies a high incidence of tuberculosis in the community as these children must have been exposed to an open case. It is, therefore, necessary to prove or disprove this by seeing every adult of the community is X-rayed. This will be done as soon as the two new Mobile X-ray Units which have been ordered are received. The Queensland Institute of Medical Research has also been asked to investigate the problem to find a possible explanation. Infection by another organism can produce a positive tuberculin re-action and it is necessary also to exclude this as a cause of the high positive rate.

The decline in the death rate from tuberculosis from 118 in 1900 to 6·6 in 1957 has been due primarily to improved housing and standard of living. This improvement has been more marked since 1950 when it was 19·8 and is due to the use of new drugs. It is the unknown case which is mainly responsible for the spread of the disease and with the introduction of mass X-ray in Queensland for which two new machines have been ordered, the examination of contacts of new cases, and B.C.G. vaccination, there should be a further fall in the incidence of the disease.

DIVISION OF MENTAL HYGIENE.

While overseas I discussed the treatment of mentally sick patients. It was emphasised there will always be mental hospitals but these hospitals must be conducted as are general hospitals. It was stated that 90 per cent. of violence and destructiveness in a mental hospital is the results of control based on fear of what the patient might do. Some hospital authorities in England and America, in an endeavour to have mental disease accepted as "just another disease" have unlocked the doors of the wards. This was something which could only be done gradually and was done ward by ward. It was made possible by the co-operation of the medical and nursing staff and the patients' relatives. Mental patients differ in no way from other persons in that when kept under lock and key they look upon themselves as prisoners. As a result of opening the doors this feeling of captivity has changed and the relationship between staff and patient has resulted in an understanding by the patient that anything that is done is being done for his benefit.

When consideration was given to the open door, the possibility of crimes of violence, suicide, and other anti-social behaviour was considered and feared, but the fears have been proven groundless. I spoke to a number of charge nurses who all agreed the patients were less destructive and aggressive since they were given their freedom.

Another new development is the day hospital. The patients reside at home but attend for treatment during the day. It enables patients to be discharged from hospital earlier and has the advantage that, while providing treatment, it enables a patient to readapt himself as a member of the community. It also is of benefit to patients who require more intensive treatment than can be given in out-patients departments but who do not need hospitalisation during both day and night. They are, therefore, for patients who would be admitted to hospital if there were no day hospitals.

ALCOHOL ADDICTION.

With the acceptance of alcohol addiction as a disease, clinics have been established overseas for the treatment of this condition. In some places in-patient treatment for long periods was preferred but the general opinion is that the patient should be given in-patient treatment for his physical condition and then returned to work and out-patient treatment. Most clinics co-operate with Alcoholics Anonymous and in my opinion this group are the biggest factor in an alcoholic remaining an abstainer.

In America industry is realising that it is more economical to rehabilitate a worker who is addicted to alcohol than to dismiss him. Surveys have shown that it is not the unskilled but rather the skilled and semi-skilled workers who form the majority of alcoholics. Every encouragement is given to the worker to receive treatment and during his absence he is given sick pay, alcoholism being accepted as a disease entitling the worker to sickness benefits. It has been found in those industries where this operates that employees instead of sheltering their alcoholic mate encourage him to receive treatment.

DIVISION OF LABORATORY SERVICES.

I visited a number of public health laboratories while abroad and the standard of work carried out by the staff of the Laboratory of

Microbiology and Pathology compares favourably, even if limited by accommodation, with any I saw. The work on leptospirosis was highly spoken of by Dr. J. C. Broom of the Wellcome Foundation and Dr. J. M. Alston of the laboratory attached to the Archway group of hospitals in London, both of whom are authorities on this condition. Co-operation in certain research projects of the Queensland Institute of Medical Research has continued and the investigation of the outbreak of ''Q'' fever is a typical example of this.

Government Chemical Laboratory.—As will be seen in the report of the Government Analyst, the number of samples of milk examined has shown an increase over the previous year. The number of prosecutions increased, all being outside the metropolitan area. Adulteration of mince meat also continues. Both milk and minced meat are used in the nutrition of infants and invalids. Adulteration of milk by water not only lowers the food value of the milk but might result in intestinal disease. Preservatives added to meat hide the fact that the meat might not be fresh. Therefore, it is necessary to police the Regulations governing the sale of these two foods regularly in order to safeguard the health of the community.

The Officers of the Government Chemical Laboratory co-operate with the Division of Industrial Medicine in the prevention of disease in industry particularly those diseases caused by industrial dusts, fumes, and gases.

VITAL STATISTICS.

Population.—The estimated population of Queensland at 31st December, 1957, was 1,401,427, an increase of 22,480 (or 1·6 per cent.) for the year. The estimated population living in the Greater Brisbane area was 546,500, an increase of 15,500 (or 2·9 per cent.) during 1957.

The population density per square mile is 2·09 persons for the whole of Queensland, 1,419 persons in the Greater Brisbane area, and 1·28 persons for the rest of the State; 39·0 per cent. of the population of the State reside in the Metropolitan area.

Births.—During 1957 births registered in Queensland totalled 33,763, an increase of 1,354 on the previous year, which was the highest number on record. The crude birth rate was 24·2, compared with 23·7 in 1956. The births comprised 17,329 males and 16,434 females, giving a masculinity rate of 105·4, which is slightly above the normal rate of about 105.

TABLE I.

CRUDE BIRTH RATE (PER 1,000 POPULATION).

——	1952.	1953.	1954.	1955.	1956.	1957.
Commonwealth of Australia	23·3	22·9	22·5	22·6	22·5	22·9
Queensland	**24·6**	**23·9**	**23·7**	**24·2**	**23·7**	**24·2**
New South Wales	22·2	22·1	21·3	21·3	21·3	21·9
Victoria	22·9	22·4	22·3	22·3	22·4	22·6
South Australia	23·7	23·4	22·9	22·5	22·3	22·3
Western Australia	25·7	25·5	24·9	25·2	25·0	24·5
Tasmania	26·5	25·3	25·0	25·6	25·2	25·5
New Zealand	24·8	24·1	24·7	24·9	24·7	24·8
United Kingdom	15·7	15·9	15·6	15·4	16·0	16·5
United States of America	24·7	24·6	24·9	24·6	24·9	25·0
Canada	27·9	28·2	28·7	28·4	28·0	28·6

The natural increase (excess of births over deaths) was 22,084, being equal to an increase of 1·6 per cent. of the population.

Deaths.—For the year 1957 deaths from all causes totalled 11,679, giving a crude death rate (deaths per 1,000 mean population) of 8·4 compared with 8·9 in the previous year, and still below the crude death rate of the Commonwealth of Australia. Table II. compares the crude death rates of Queensland, other States, and certain overseas countries since 1952.

TABLE II.

CRUDE DEATH RATE (PER 1,000 POPULATION).

——	1952.	1953.	1954.	1955.	1956.	1957.
Commonwealth of Australia	9·4	9·1	9·1	8·9	9·1	8·8
Queensland	**8·9**	**8·5**	**8·6**	**8·4**	**8·9**	**8·4**
New South Wales	9·6	9·4	9·5	9·3	9·6	9·2
Victoria	10·0	9·5	9·2	8·9	9·2	9·0
South Australia	9·3	9·0	9·0	9·2	8·9	8·7
Western Australia	8·7	8·2	8·4	8·2	8·2	7·7
Tasmania	8·6	8·3	8·7	7·9	7·8	8·1
New Zealand	9·3	8·8	9·0	9·0	9·0	9·3
United Kingdom	11·4	11·4	11·4	11·7	11·7	11·5
United States of America	9·6	9·6	9·2	9·3	9·4	9·6
Canada	8·7	8·6	8·2	8·2	8·2	8·3

The causes of death to residents of Queensland during 1957 are shown in Table III.

TABLE III.

Showing Causes of Death of Residents of Queensland, 1954–57.

Causes of Death.	Males.	Females.	Total. 1957.	Persons.		
				1956.	1955.	1954.
Tuberculosis of Respiratory System	74	14	88	76	130	132
Tuberculosis, other	1	3	4	5	7	8
Diphtheria	..	1	1	3	10	4
Whooping Cough	1	3	4	..	..	3
Tetanus	11	1	12	15	10	14
Acute Poliomyelitis	1	..	1	5	5	5
Measles	..	..	..	10	2	7
Other Infectious and Parasitic Diseases	42	20	62	98	82	78
Malignant Neoplasms	997	728	1,725	1,696	1,601	1,558
Neoplasms, Benign and Unspecified	12	19	31	44	48	59
Hay Fever and Asthma	42	37	79	80	73	85
Diabetes Mellitus	45	71	116	133	137	135
Other Allergic, Endocrine System, Metabolic, and Nutritional Diseases	17	25	42	43	41	46
Pernicious and other Hyperchromic Anaemias	4	11	15	18	21	24
Other Diseases of the Blood and Blood-forming Organs	18	27	45	45	40	51
Mental, Psychoneurotic and Personality Disorders	48	25	73	87	87	71
Vascular Lesions affecting the Central Nervous System	703	772	1,475	1,567	1,404	1,421
Other Diseases of the Nervous System and Sense Organs	106	91	197	194	185	161
Diseases of the Heart	2,061	1,141	3,202	3,450	3,199	3,117
Hypertensive Disease	239	255	494	533	552	629
Other Diseases of the Circulatory System	152	152	304	271	296	245
Influenza	32	19	51	38	28	74
Lobar Pneumonia	75	44	119	123	98	111
Bronchopneumonia	92	78	170	237	149	156
Other and Unspecified Pneumonia	74	67	141	122	70	79
Bronchitis	90	35	125	149	103	117
Other Diseases of Respiratory System	157	71	228	218	196	181
Diseases of Stomach and Duodenum	77	28	105	107	103	114
Appendicitis	17	9	26	26	28	32
Diseases of Liver, Gallbladder, and Pancreas	74	49	123	140	132	127
Other Diseases of Digestive System	105	78	183	174	206	152
Nephritis and Nephrosis	155	124	279	301	271	275
Diseases of Male Genital Organs	76	..	76	90	88	114
Other Diseases of Genito-Urinary System	62	48	110	103	123	85
Deliveries and Complications of Pregnancy, Childbirth, and Puerperium	..	21	21	29	20	30
Diseases of the Skin and Cellular Tissue	16	21	37	28	25	19
Diseases of the Bones and Organs of Movement	18	26	44	47	40	51
Congenital Malformations	94	75	169	193	170	162
Intra-cranial and Spinal Injury at Birth	43	26	69	47	66	71
Other Birth Injury	21	17	38	45	43	37
Post-Natal Asphyxia and Atelectasis	34	24	58	61	66	67
Infections of Newborn	16	16	32	25	23	24
Immaturity Unqualified	93	70	163	188	137	185
Other Diseases Peculiar to Early Infancy	39	32	71	73	63	69
Senility without mention of Psychosis	77	97	174	197	136	168
Symptoms Referable to Systems or Organs	10	6	16	13	14	19
Ill-defined and Unknown Causes	34	7	41	31	33	37
Motor Vehicle Traffic Accidents	262	50	312	316	276	259
Accidental Falls	87	99	186	180	188	191
Accidental Drowning and Submersion	48	10	58	73	60	62
Other Accidents	200	64	264	276	258	252
Suicide and Self-Inflicted Injury	153	46	199	145	151	150
Homicide and Injury Purposely Inflicted by Other Persons	8	13	21	18	16	21
Total from all Causes	6,913	4,766	11,679	12,186	11,307	11,344

Diseases of the heart, hypertension and vascular lesions affecting the nervous system, are again the greatest cause of death in the population.

Deaths from motor vehicle traffic accidents remained steady at 312 as compared with 316 in 1957.

There were 1,725 deaths from cancer as compared with 1,696 in 1957.

There was only one death from diphtheria, which is the lowest on record.

TABLE IV.

INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR PER 1,000 LIVE BIRTHS).

——	1952.	1953.	1954.	1955.	1956.	1957.
Commonwealth of Australia	23·8	23·3	22·5	22·0	21·7	21·4
Queensland	**24·9**	**25·0**	**22·3**	**20·3**	**22·7**	**21·6**
New South Wales	24·5	24·6	25·3	24·9	23·5	22·7
Victoria	22·3	21·2	19·3	18·4	19·3	20·2
South Australia	23·1	20·7	21·3	23·3	19·9	20·6
Western Australia	24·9	23·8	22·5	22·4	22·7	21·1
Tasmania	21·7	22·9	23·9	23·4	22·0	20·2
New Zealand	21·8	20·1	20·0	20·1	19·4	19·8
United Kingdom	28·1	27·6	26·4	25·8	24·4	*
United States of America	28·4	27·8	26·6	26·4	26·0	*
Canada	38·2	35·6	31·9	31·3	31·9	*

* Not available.

Marriages.—Registration of marriages during the year totalled 10,271, compared with 9,934 in 1956. The marriage rate was 7·4 per thousand mean population, compared with 7·3 in 1956. Marriages of minors during the year totalled 4,885 of whom 983 were males and 3,902 females.

Infantile Mortality.—The infantile mortality rate of Queensland, and other States and certain overseas countries is shown in Table IV., while Table V. is a composite one showing the birth rates, infantile mortality, and reproduction rates of Queensland compared with the Commonwealth of Australia.

TABLE V.

BIRTH, INFANT MORTALITY, MATERNAL MORTALITY, AND REPRODUCTION RATES, QUEENSLAND AND AUSTRALIA.

——	Crude Birth Rate.		Infant Mortality Rate.		Maternal Mortality Rate. (1)		Gross Reproduction Rate. (2)		Net Reproduction Rate. (3)	
	Queensland.	Australia.	**Queensland.**	Australia.	**Queensland.**	Australia.	**Queensland.**	Australia.	**Queensland.**	Australia.
1946	**24·8**	23·7	**29·3**	29·0	**2·26**	1·85	**1·55**	1·46	**1·42**	1·33
1947	**25·6**	24·1	**30·8**	28·5	**1·62**	1·87	**1·64**	1·49	**1·54**	1·36
1948	**24·7**	23·1	**28·0**	27·8	**1·47**	1·40	**1·59**	1·45	**1·51**	1·33
1949	**24·0**	22·9	**24·7**	25·3	**1·44**	1·21	**1·56**	1·46	**1·48**	1·33
1950	**24·4**	23·3	**24·8**	24·5	**1·45**	1·09	**1·60**	1·49	**1·52**	1·42
1951	**24·2**	23·0	**25·7**	25·2	**1·18**	1·05	**1·62**	1·49	**1·54**	1·21
1952	**24·6**	23·3	**24·9**	23·8	**1·03**	0·94	**1·67**	1·55	**1·59**	1·47
1953	**23·9**	22·9	**25·0**	23·3	**0·71**	0·62	**1·65**	1·56	**1·57**	1·48
1954	**23·7**	22·5	**22·3**	22·5	**0·96**	0·69	**1·67**	1·56	**1·59**	1·48
1955	**24·2**	22·6	**20·3**	22·0	**0·62**	0·64	**1·71**	1·59	**1·62**	1·51
1956	**23·7**	22·5	**22·7**	21·7	**0·89**	0·56	**1·72**	1·61	**1·63**	1·53
1957	**24·2**	22·9	**21·6**	21·4	**0·62**	*	*	*	*	*

* Not available.

(1) *Maternal Mortality Rate.*—Deaths from puerperal causes per 1,000 live births.

(2) *Gross Reproduction Rate.*—Represents the number of female children born on the average to women living right through the child-bearing years if the conditions on which the rate is based continue.

(3) *Net Reproduction Rate.*—Is the gross reproduction rate corrected for deaths of females from birth to the end of the child-bearing period. It is a more accurate index than the gross reproduction rate. Unless it exceeds unity the population is not replacing itself.

The net reproduction rate is higher than the Australian average, whilst the maternal mortality rate declined from 5·77 in 1911 to 0·62 in 1957.

If the crude death rate had remained at the level prevailing in 1900, over 4,600 additional deaths would have occurred in Queensland during 1957. In addition, the expectation of life has been increased by 15 years during that period.

DIVISION OF PUBLIC HEALTH SUPERVISION.

Deputy Director-General of Health and Medical Services: D. W. Johnson, M.B., B.S., (Syd.), D.T.M. & H. (Syd.).
Chief Inspector of Food and Drugs: W. H. Kelly.
Chief Sanitary Inspector: W. D. Pryor.
Secretary to Director-General of Health and Medical Services: R. Woodley.
Microscopist-in-Charge, Hookworm Control: S. Thompson.

Inspectors in Charge of District Offices:

Townsville: H. P. Lowes.
Cairns: B. M. Keeffe.
Toowoomba: W. J. Shields (Acting).
Rockhampton: G. W. Cuffe.
Mackay: R. A. Burke.

SECTION OF COMMUNICABLE DISEASE CONTROL.

Tables VI. and VII. show the reported incidence of notifiable diseases in the Metropolitan and extra-Metropolitan areas of the State for 1957-8, and Table VIII. shows the reported incidence for the whole State during 1957.

TABLE VI.

Communicable Diseases (exclusive of Venereal Diseases) 1st July, 1957, to 30th June, 1958.
Metropolitan Area (Population at 1st July, 1957—543,000).

Diseases.	Months.												Total 1957-- 1958.
	1957.						1958.						
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	
Anchylostomiasis	..	2	..	1	..	1	1	1	..	..	..	3	9
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..	..	..	..	..
Breast Abscess	..	..	4	2	6	2	1	5	1	2	1	..	24
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..
Chorea	..	1	..	..	..	..	..	..	1	..	..	..	2
Coastal Fever	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	2	1	..	3	10	9	17	6	2	1	4	1	56
Diphtheria	..	1	..	..	..	1	..	..	..	..	..	..	2
Dysentery, Amoebic	..	..	..	..	..	..	..	..	..	..	..	..	..
Dysentery, Bacillary	2	1	1	..	7	5	1	5	7	5	6	4	44
Dysentery Shigella	..	..	..	..	..	..	..	..	..	..	1	1	2
Encephalitis Lethargica	..	..	..	..	..	..	..	1	..	..	..	..	1
Erythema Nodosa	..	..	..	..	..	..	..	..	..	..	..	..	..
Filariasis	..	..	..	..	..	..	..	..	..	..	..	..	..
Hansen's Disease	..	..	..	..	..	..	..	..	..	..	..	1	1
Hepatitis, Infective	6	2	3	4	..	1	1	5	..	4	2	1	29
Lead Poisoning	..	..	..	..	..	..	..	..	1	..	..	..	1
Leptospirosis (Weil's Disease, Para-Weil's Disease, Seven-day Fever)	1	1	..	1	..	..	1	1	..	1	1	1	8
Malaria	1	..	..	..	..	..	..	..	..	..	4	..	5
Meningitis, Cerebro-spinal	..	4	..	..	1	1	3	1	1	..	..	2	13
Mossman Fever	..	..	..	..	..	..	..	..	..	..	..	..	..
Plague, Bubonic or Oriental	..	..	..	..	..	..	..	..	..	..	..	..	..
Plueral Effusion	1	3	..	1	..	..	..	..	..	..	..	1	6
Poliomyelitis	..	..	..	..	..	..	..	..	..	1	1	..	2
Puerperal Fever	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Pyrexia	..	..	..	..	2	..	..	..	..	..	..	..	2
Q. Fever	4	4	3	5	1	2	4	..	..	..	1	..	24
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatic Fever	8	6	3	11	13	2	3	6	3	4	1	6	66
Rubella	..	1	38	86	53	17	3	4	..	..	..	..	202
Sarina Fever	..	..	..	..	..	..	..	..	..	..	..	..	..
Scarlet Fever or Scarlatina	12	8	10	6	7	5	7	4	1	8	6	6	80
Smallpox (including Amaas or Alastrim)	..	..	..	..	..	..	..	..	..	..	..	..	..
Tetanus	1	..	1	..	1	1	2	1	..	..	3	..	10
Tuberculosis (all forms)	34	28	58	31	31	47	34	15	50	23	37	21	409
Typhoid Fever (including Paratyphoid Fevers)	..	..	..	..	..	..	..	1	1	2	..	..	4
Typhus Fever—													
Scrub	..	..	..	..	..	..	..	..	..	..	..	..	..
Tick	..	..	..	..	1	..	..	..	..	..	..	..	1
Murine	..	..	..	..	1	..	..	..	..	..	..	..	1
Undulant Fever	1	..	..	..	..	..	..	..	..	..	..	..	1
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	
Totals	73	63	121	151	134	94	78	56	68	51	68	48	1,005

TABLE VII.

COMMUNICABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1ST JULY, 1957, TO 30TH JUNE, 1958.
EXTRA-METROPOLITAN AREA (POPULATION AT 1ST JULY, 1957—853,740).

Diseases.	Months.												Total 1957–1958
	1957.						1958.						
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	
Anchylostomiasis ..	25	30	24	5	14	8	11	9	11	..	2	4	143
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..	..	..	..	..
Breast Abscess ..	..	..	5	6	16	16	16	7	9	4	10	3	92
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..
Chorea	..	..	..	..	..	..	..	..	..	..	..	..	..
Coastal Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	..	2	1	..	1	12	4	5	7	1	..	10	43
Diphtheria	2	..	..	..	..	..	..	..	..	..	1	1	4
Dysentery, Amoebic	..	2	..	..	..	..	..	1	..	..	..	1	4
Dysentery, Bacillary	..	..	1	3	2	2	2	2	2	3	4	..	21
,, Shigella ..	..	..	..	..	..	..	..	..	..	..	..	2	2
Encephalitis, Lethargica	1	..	..	..	1	..	..	..	..	..	..	..	2
Erythema Nodosa ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Filariasis	..	..	..	..	..	..	..	..	1	1	..	..	2
Hansen's Disease ..	1	..	1	..	..	..	..	2	1	1	..	..	6
Hepatitis, Infective	1	1	6	3	22	22	37	34	48	22	26	35	257
Lead Poisoning ..	..	1	..	..	..	1	..	2	1	..	3	..	8
Leptospirosis (Weil's Disease, Para-Weil's Disease, Seven-day Fever)	15	70	19	..	5	1	2	7	11	10	11	6	157
Malaria	..	2	..	..	..	..	..	..	..	..	1	3	6
Meningitis Cerebro-spinal	6	5	6	3	1	5	1	1	2	..	2	..	32
Mossman Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Plague, Bubonic or Oriental	..	..	..	..	..	..	..	..	..	..	..	..	..
Pleural Effusion ..	..	..	..	..	..	..	1	..	..	..	..	..	1
Poliomyelitis ..	..	..	..	1	..	..	..	..	1	..	..	1	3
Puerperal Fever ..	..	1	..	5	..	1	..	..	1	1	1	3	13
Puerperal Pyrexia ..	..	1	2	3	1	4	2	5	2	..	..	2	22
Q. Fever	..	..	..	..	6	4	1	1	7	1	2	1	23
Relapsing Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatic Fever ..	6	4	14	8	5	20	20	19	14	19	8	18	155
Rubella	..	..	4	16	18	3	1	2	..	..	..	..	44
Sarina Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scarlet Fever or Scarlatina	16	15	21	5	3	7	11	2	4	12	19	9	124
Smallpox (including Amaas or Alastrim)	..	..	..	..	..	..	..	..	..	..	..	..	..
Tetanus	1	2	2	2	1	4	..	2	1	..	1	1	17
Tuberculosis (all forms)	35	33	33	38	42	42	33	36	38	29	42	42	443
Typhoid Fever (including Para-typhoid Fevers) ..	2	..	..	..	..	..	..	1	..	..	..	1	4
Typhus Fever—													
Scrub	4	7	3	1	1	1	..	..	1	1	1	2	22
Tick	..	..	..	..	..	..	..	..	..	..	..	..	..
Murine	..	..	..	2	1	3	2	2	..	..	..	..	10
Undulant Fever ..	1	..	..	..	..	..	1	2	..	2	1	..	7
Yellow Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	116	176	142	111	140	156	145	142	162	107	135	145	1,667

TABLE VIII.

NOTIFIED INCIDENCE OF COMMUNICABLE DISEASES IN QUEENSLAND (EXCLUSIVE OF VENEREAL DISEASES), SECTION 29 OF "THE HEALTH ACTS, 1937 TO 1955," DURING THE CALENDAR YEAR 1957.

Diseases.	Cases Reported on Prescribed Form.			
	Metropolis.	Outside Areas.	Total Whole State, 1957.	Total Whole State, 1956.
Anchylostomiasis	15	197	212	343
Anthrax	..	..	..	..
Bilharziasis	..	..	..	..
Breast Abscess	14	43	57	Not then notifiabe
Coastal Fever	..	..	..	..
Cholera	..	..	..	..
Chorea	1	..	1	1
Diphtheria	3	13	16	20
Diarrhoea (Infantile)	64	42	106	173
Dysentery, Amoebic	..	2	2	7
Dysentery, Bacillary	66	34	100	308
Encephalitis Lethargica	..	2	2	1
Erythema Nodosa	..	..	..	..
Filariasis	..	..	..	1
Hepatitis, Infective	16	55	71	Not then notifiable
Lead Poisoning	1	4	5	14
Hansen's Disease	..	2	2	1
Leptospirosis (including Weil's Disease, Para-Weil's Disease, Seven-day Fever)	6	191	197	199
Malaria (Infection not attributable to Queensland)	9	22	31	18
Meningitis, Cerebro-spinal	9	38	47	45
Mossman Fever	..	..	..	..
Plague, Bubonic or Oriental	..	..	..	..
Pleural Effusion	5	..	5	2
Poliomyelitis,	1	23	24	112
Puerperal Fever	..	12	12	23
Puerperal Pyrexia	3	15	18	20
Q. Fever	21	14	35	12
Relapsing Fever	..	..	..	..
Rheumatic Fever	72	111	183	164
Rubella	198	43	241	19
Sarina Fever	..	..	..	..
Scarlet Fever or Scarlatina	90	113	203	257
Smallpox (including Amaas or Alastrim)	..	..	..	..
Tetanus	9	21	30	36
Tuberculosis (all forms)	365	397	762	726
Typhoid Fever (including Para-typhoid Fevers)	2	4	6	7
Typhus Fever—				
Scrub	..	33	33	13
Tick	1	..	1	4
Murine	4	14	18	17
Undulant (Malta) Fever	3	1	4	11
Yellow Fever	..	..	..	..
Totals	978	1,446	2,428	2,554

In the financial year 1957–58, an increased number of notifications was received of Q. fever and rubella in the Metropolitan area and of Hansen's disease, lead poisoning, Q. fever, rheumatic fever and rubella in country districts when compared with the previous year. Considering the whole State for the calendar year 1957 the following diseases showed increased notifications: Q. fever (12 in 1956, to 35 in 1957), rubella (19 to 241), tuberculosis (608 to 746) and scrub typhus (13 to 33). The following decreases were recorded: Anchylostomiasis (343 in 1956 to 212 in 1957), diphtheria (20 to 16), infantile diarrhoea (173 to 106), bacillary dysentery (308 to 100), poliomyelitis (112 to 24), puerperal fever and pyrexia (43 to 30), rheumatic fever (183 to 164), scarlet fever (257 to 203), and tetanus (36 to 30). Total notifications for the whole State declined from 2,554 in 1956 to 2,428 in 1957.

POLIOMYELITIS.

The most dramatic fall in notifications has been seen in poliomyelitis. In 1957–58, although there were two notifications in Brisbane and three in the rest of the State, the only established case of paralytic poliomyelitis occurred in a twelve-year-old girl who was sick with the disease when she arrived in Queensland. This is a remarkable reduction, and it is appropriate here to give the notified incidence of poliomyelitis over the last five years.

TABLE IX.

SHOWING NOTIFICATIONS OF POLIOMYELITIS.

Year.	Brisbane.	Rest of State.	Total.
1953–54	28	40	68
1954–55	66	182	248
1955–56	65	42	107
1956–57	7	38	45
1957–58	2	3	5

There is no doubt about the fall, but to ascribe the reduction as being entirely due to Salk vaccine, which was first given in July, 1956, is an over simplification. A little reflection should generate caution, though it will not unduly dampen optimism. In the first place, only about 25 per cent. of the population of Queensland has had Salk vaccine—and these are the children. If poliomyelitis virus had been circulating in the community during the last two years, it would be reasonable to expect some cases in the 75 per cent. fraction of the population that has received no vaccine. In fact, there were no cases at all either in this group or in vaccinated children. There must have been a very small concentration of virus in this State to produce this effect. However, the low incidence is definitely reassuring for the future.

It is true that children contributed 60 per cent. of all cases of polio, yet persons in the age group 15-44 years, who comprise 42 per cent. of the population, have in the recent past contributed about 38 per cent. of cases of polio. This is a very important section of the community—it represents the reproductive and the income-earning population. It has had no protection against poliomyelitis other than the immunity induced by accidental and natural exposure to the virus.

The Government has therefore decided to offer Salk vaccine to this section of the population when the current campaign of vaccinating school and pre-school children ends in July, 1958. In the Greater Brisbane area, vaccine will be administered and clinics organized by this Department. In the country, organization and administration of vaccine will be carried out by the Local Authority. Already it is clear that about 60 per cent. of those eligible to receive the vaccine will apply for it—and this is a tribute not only to the Queensland Health Education Council which arranged the publicity but also to the intelligence and common sense of the people who have applied for the vaccine. Most of them knew that the vaccine was harmless and that it was effective. Publicity therefore fell on fertile soil. In this connection, it is appropriate that I should take this opportunity to thank our friends of the press and radio world who for more than two years now have given us complete co-operation and invaluable publicity in the campaign, first for the children and now for adults. To them is due a large measure of the success achieved in Queensland when compared with certain southern States where public response has been poor.

Q. FEVER.

This disease has certainly existed in nature from time immemorial and it probably had a cycle in animals and vectors long before its existence in man was first recorded by Derrick in this State about 21 years ago. It seems odd that Q. fever has not been noticed or described in Europe or in America before its discovery in Queensland. Indeed, when first described, Q. fever was thought to be a rare and rather unusual disease confined to bandicoots and ticks which had somehow become transferred to cattle. It was first described in meat workers at the Brisbane Abattoir, but very little overseas interest was roused until an identical disease was discovered in Montana, U.S.A., about a year later. World War II. brought to light cases of the disease in practically every theatre of war, except in the Pacific. Since then there are few countries where Q. fever has not been found to be endemic.

How did Q. fever come to be discovered first in Queensland? This, on the surface, is a classic example of serendipity or happenstance. It was a disease of meat workers in Brisbane which had attracted the attention of doctors practising nearby and in the Brisbane General Hospital (to which many of the patients were admitted). However, it is probable that the specific cause of Q. fever would have remained unknown had not a doctor appeared who had knowledge of animal inoculation. Blood cultures and serological tests had given negative results until Derrick took over as Director of the Laboratory of Microbiology and Pathology in October, 1935. Derrick had had experience with experimental animals, especially with guinea pigs, and when the usual laboratory tests failed to furnish a diagnosis he inoculated guinea pigs with blood taken from patients with this unknown fever. The inoculated animals were kept in glass jars on a table in the laboratory, and visitors, whether adults or children, were intrigued to watch the guinea pigs nibbling pumpkin in their jars or being taken out to have rectal temperatures read and recorded. Unless temperatures had been taken the disease would have remained undetected, as the guinea pigs were not very sick and none of them died. When the infected animals reacted with fever there was little evidence of active disease on autopsy beyond moderate enlargement of the spleen. However, two guinea pigs were usually inoculated with blood from the patient while only one was sacrificed. Derrick thus was able to develop the first specific test for the diagnosis of Q. fever. He inoculated an extract of spleen into two guinea pigs one of which had already reacted with fever and had survived. This guinea pig showed no fever if the patient had Q. fever. It was immune, but its non-immune companion developed the disease. Within a few months it was therefore possible to diagnose Q. fever with a fair degree of accuracy by injecting two guinea pigs, one of which was immune, with blood from a patient. Although cumbersome, the test worked well until the causative organism (Coxiella burneti) was discovered by Burnet. It was then possible to grow a rich concentration of organisms in ticks and to use the tick extract as the antigen for an agglutination test. Nowadays, highly sensitive antigen for the complement fixation test is imported from the United States.

It is fitting that a tribute should be paid in this Report to the discovery of an important disease such as Q. fever. Derrick had the prepared mind and the sagacity to discover it and to develop techniques to diagnose it. Chance no doubt brought discoverer and disease together, but chance favours most the mind that is prepared.

Q. fever has been a notified disease only since 1952. The notified cases each year since then have been as follows:—1952—34; 1953—26; 1954—24; 1955—15; 1956—12; 1957—35.

Although these figures show no trend to an increase, the number of positive results recorded by the Laboratory of Microbiology and Pathology from human sources shows a rise. In 1956-57, there were 76 positive results and in 1957-58 there were 186—an increase of 140 per cent. This is an absolute increase, for it is greater than could be accounted for by increased number of blood specimens submitted for diagnosis. It appears likely that the host range of Q. fever is increasing or that the number of infected animals has increased sharply.

The disease poses certain challenges to preventive medicine. The causal organism multiplies exceedingly in certain susceptible hosts and vectors, and can persist for considerable periods exposed to the weather. It spreads readily by inhalation or by contact with infected material. Certain occupational groups are exposed to infection. An effective vaccine has not been developed, and control measures at the moment appear to have limited value. After all, cows must be milked, sheep must be shorn and animals must be slaughtered—and if a person handling these animals or their products has no immunity he runs the risk of infection, though this is relatively mild in Australia. There is obvious need for a long term research programme to study infection in animals and in vectors and how infection is or can be transferred. There is also need to develop some method of prophylaxis—such as a vaccine. There is need to investigate the circumstances of infection in every case, because, with the disease spreading as it is, new epidemiological information of significant value may be brought to light.

It is proper that this State, where Q fever was first discovered, should keep in the forefront of research to control it.

Breast Abscess.

Breast Abscess was made a notifiable disease on June 29th, 1957, on the recommendation of the National Health and Medical Research Council. It was felt that the incidence of breast abscess would be a fairly reliable index of the extent of infection by staphylococci in maternity hospitals. This problem has assumed increasing proportions in recent years. It is now fairly common for a baby to develop skin or eye lesions in the first week of life due to infection with antibiotic-resistant staphylococci. The organisms quickly invade the nasal passages of the baby and, in suckling, infection can be transferred to the breast of the mother.

During the year, 116 cases of breast abscess were notified. Notified cases were fairly evenly distributed throughout the State, and this is in itself good evidence of the wide distribution of staphylococci in our population.

Infective Hepatitis.

This was made notifiable on 29th June, 1957, on the recommendation of the National Health and Medical Research Council. Infective hepatitis is now notifiable in all States except Tasmania.

Notifications for the year totalled 286, of whom 169 were males and 117 were females. The age distribution of notified cases was as follows: 0-4 years—12; 5-14 years—104; 15-24 years—57; 25-39 years—77; 40 years and over —36.

The incidence of the disease appears to have been highest in the Town of Gympie and Shires of Eidsvold, Banana, Cloncurry and Quilpie. In the Greater Brisbane Area, only 29 notifications were received, and it seems that the incidence of the disease was less than in certain country districts. Infective hepatitis is a disease of sanitation and droplet infection appears to be unimportant in its spread. It can readily be transmitted in unchlorinated water whilst the virus can infect food if those responsible for handling and preparing food happen to be carriers of the virus.

RHEUMATIC FEVER.

Acute rheumatic fever was made a notifiable disease in March, 1954. For the four years, 1954–55 to 1957–58, notifications have totalled 760, of which 221 were in the current year. There has not been a preponderance of notifications from Brisbane, as might be expected. Indeed 55 per cent. of the notifications for the period under review have come from country districts, and during the last twelve months, 221 cases (or 70 per cent. of the total) were from outside the capital.

In view of the impression held in some quarters that rheumatic fever is relatively rare in tropical countries, being associated with cold and damp, these figures are rather surprising. As far as age incidence is concerned, Table X. shows the age and sex distribution of 760 notified cases.

TABLE X.

SHOWING AGE DISTRIBUTION OF 760 CASES OF ACUTE RHEUMATIC FEVER, NOTIFIED IN QUEENSLAND FOR THE FOUR FISCAL YEARS, 1954–58 TO 1957–58.

Age Group.	Notifications.		Male. Female Ratio.	Age composition Queensland Population.
	Number.	Percentage of Total.		
				Per cent.
0–9 years	308	40·5	1·36	21·7
10–19 years	314	41·3	0·87	15·2
20–29 years	61	8·0	2·19	14·4
30–39 years	48	6·3	1·00	14·6
40 years and over	29	3·8	1·08	34·1
All Ages	760	100·0	0·81	100·0

Of the 221 cases notified last year, no fewer than 107 (47 per cent.) came from the Darling Downs statistical division which contains rather less than 10 per cent. of the State's population. Toowoomba (population of 45,000) contributed 73 cases during the year—and this figure is an extraordinary one. Why is the disease apparently so common on the Darling Downs compared with other parts of Queensland? Is it associated with the cold winters experienced there, or is it due to some socio-economic factor? Is it due to the prevalence of a rheumatogenic type of streptococcus? Is it due partly to the local doctors being very conscious of the disease? No definite answers can be provided at the present time but further investigations are warranted.

Furthermore, 40 per cent. of the notified cases are in children under 10 years of age, and 41 per cent. are aged between 10 and 20 years. In these age groups the risk of permanent heart damage, either in the initial attack or during a recurrence, is very real, and it is essential that every patient should receive prophylactic treatment with oral penicillin for several years after an acute attack. It has been demonstrated conclusively that continued penicillin therapy will prevent further damage to the heart, and this treatment should therefore become routine for all cases of rheumatic fever.

Notifications did not show any significant variation when grouped according to month and season.

RUBELLA.

Rubella is notifiable only in females over the age of 15 years. In a normal year less than 30 notifications are received. However, notified cases showed a sharp increase this year, and there is little doubt that the disease assumed epidemic proportions. There were no notifications during July, 1957. In August there was one notified case. Thereafter, September yielded 41 cases; October, 104 cases; November, 66 cases and December, 17 cases. Four notifications were received in January and the same number in February, but none since. The epidemic was therefore clearly defined, and arrangements have been made to follow-up babies whose mothers had rubella in pregnancy so that the effect of the virus in causing congenital abnormalities can be determined. The epidemic of 1940 in Australia attracted world wide attention because of its association with visual and aural defects in babies born to mothers who were pregnant at the time of infection. It has been the impression of many doctors that this particular epidemic caused severe symptoms in some patients, and perhaps the virus was more virulent than usual. This is a good opportunity to see if the incidence of congenital defects is lower than that noted after 1940.

Of 237 cases notified during the year, only 42 (18 per cent.) came from country districts which contain 60 per cent. of the population of the State. Either country doctors failed to diagnose and report these cases, or else there were really fewer cases. The latter is the more likely explanation. The age distribution of notified cases is interesting—54 per cent. were in girls aged 15 to 19, and the great majority of these were unmarried. Of 92 cases (39 per cent. of the total) of childbearing age (20-39 years) it could be expected that not more than 15 would have been pregnant, and of these not more than five would have become pregnant during the four peak months of the outbreak. However, it is likely that many more cases occurred than were actually notified.

TETANUS.

In the last eight years prevention of tetanus has received considerable publicity. The antigens are free, and most local authorities and doctors now use triple antigen, which confers very satisfactory immunity in children. Every year, however, between 25 and 40 notifications are received, and about half of these patients die. Everyone at some time receives injuries in which tetanus organisms can thrive, but injuries are especially common in males. It is therefore reasonable to ask that every male should be actively immunized against one of the major killers from infectious disease.

A person who has received three doses of potent tetanus toxoid runs little risk of contracting tetanus. However, if he does sustain an injury in circumstances which make infection likely, he can obtain prompt protection from a dose of toxoid. For complete protection, he can have a booster or reinforcing dose of tetanus toxoid every five years.

Consider now the unenviable plight of the person who is not immunized. He never knows that any particular injury will not end in tetanus. He either decides to ignore the risk or he visits a doctor. If the doctor is not satisfied with the patient's immune status, he advises him to have a dose of tetanus antitoxin which will protect him only for a week or two. If he gets another injury he has to have another dose, and each dose brings with it an increasing likelihood of adverse reactions due to sensitivity to horse serum. Most of these are very uncomfortable but severe generalised reaction can be fatal. Indeed tetanus antitoxin causes so many complications that ideally its use should be reserved for the actual treatment of tetanus. With tetanus toxoid so freely available and so effective, tetanus antitoxin should have a very minor role in the prophylaxis of the disease.

HANSEN'S DISEASE.

(1) HANSEN'S DISEASE IN THE WHITE POPULATION.

Peel Island.

Medical Superintendent: M. A. Gabriel, M.B., B.S. (Qld.), A.R.A.C.I.

TABLE XI.

Comparison of Statistics for the Financial Years 1955–56—57–58.

—	1955–56.			1956–57.			1957–58.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Population at 1st July	16	6	22	16	5	21	14	6	20
Admitted	2	1	3	..	1	1	4	..	4
Discharged	2	2	4	2	..	2	3	1	4
Died	..	..	..	..	..	..	1	..	1
Population at 30th June	16	5	*21	14	6	*20	14	5	†19
Increase	..	..	..	..	1	..	..	..	..
Decrease	..	1	1	2	..	1	..	1	1

* These totals include 2 patients given special permission to remain in the institution although eligible for discharge.

† This total includes 3 patients as above.

Admissions.

This year three male patients were admitted for the first time and one male patient was re-admitted. All three of the new admissions showed considerable advancement of the disease, and in one case the diagnosis had been missed because the patient had a history of exposure to arsenic and showed evidence of arsenical poisoning, and was still excreting small quantities of arsenic at the time of his admission. It may be of interest to note here than Hansen's Disease should be considered in the differential diagnosis in cases of a typical arsenical poisoning, myxoedema, syringomyelia and all skin conditions in which hyperaesthesia, paraesthesia or anaesthesia are prominent features.

The re-admitted patient was a young male who, on his own admission, had neglected to take any maintenance treatment after his discharge two years before. While this has been an unfortunate occurrence for the patient concerned it has been an object lesson to the other patients, and it has convinced them of the necessity for maintenance treatment after discharge. It is our experience that the majority of discharged patients continue with maintenance treatment for at least the period of their observation (six years from the date of discharge), and the small number of re-admissions of recent years bears witness to the effectiveness of this procedure.

This is the third year in succession in which the admission rate has been well below average (the average being seven per annum). Whether this is a reflection of the increasing rarity of Hansen's Disease in Queensland or not is difficult to determine, but I feel that there is reason to believe that Hansen's Disease is slowly being eliminated from our community. One of the newly admitted patients is a resident of the Northern Territory.

Releases.

One female and three male patients were released during the year. All were well at the time of release but two of them had considerable permanent disability due to the effects of Hansen's Disease, which both had suffered for many years prior to the introduction of the sulphone drugs. The other two released patients had little or no disability.

Deaths.

One male patient died at the age of seventy-nine years from a heart condition. His health had been poor for some time.

Medical Treatment.

As in previous years the principal drugs used against Hansen's Disease were dapsone (a sulphone drug) and thiacetazone (a thiosemicarbasone drug). Trials were continued during the year with "Avlosulfon Soluble," a drug administered by intramuscular injection; it is an effective drug but the results of trials here indicate that it is no more effective and only a little less toxic than the oral drugs mentioned above.

Occupational Therapy.

Leather work, basket-making, plastic crafts, etc., are very popular with the patients and occupy much of their time. Miss N. Ferrier, Superintendent of the Red Cross Handcrafts Section, paid nine visits to Peel Island during the year to give instruction and to arrange supplies of handcraft materials. Some of the patients are quite competent woodworkers. Patients are also employed as poultry farmers, barber, painter, truck driver, and seamstress, as forms of occupational therapy.

MEDICAL VISITS.

Dr. Mandelesi, a Franciscan Missionary, paid a short visit to Peel Island on his way to a mission hospital to treat large numbers of Hansen's Disease cases in New Guinea.

A number of medical students again visited this hospital during the year and were given clinical demonstrations in Hansen's Disease.

SPECIALIST SERVICES.

A dentist from the Brisbane Dental Hospital made ten (10) visits to carry out a wide variety of dental work for the patients.

The official optometrist made three (3) visits to prescribe and fit spectacles for the patients.

As in previous years a number of patients were transferred to the Brisbane General Hospital for specialist medical and surgical treatment.

The Laboratory of Micro-biology and Pathology examined 460 specimens submitted from this hospital during the year, the details being:

	Specimens.
Venous Blood for Full Blood Count ..	126
Tissue Smears for *M. leprae*	221
Blood for Serological Tests	4
Blood for ABO and Rh Grouping ..	4
Urine for Chemical and Microscopical Tests	105
Total	460

STAFF AND ADMINISTRATION.

The staff remained the same in numbers and categories as in the previous year. The only section in which there is a constant change of personnel is the nursing staff. However we have been fortunate in always being able to find trained nurses willing to work among our patients.

BUILDINGS AND GROUNDS.

A start was made late in the year on the renovation of the kitchen-dining room blocks and the work is now well in hand. The completion of this block will mean that the whole of the buildings of the institution have been renovated. The generally improved appearance of the buildings and grounds has had a profound effect on the patients, the majority being cheerful and optimistic.

The jetties and roads are in good repair but the concrete causeway leading to the new jetty is showing signs of deterioration and it is intended that this causeway be resurfaced and strengthened at an early date.

LAUNCH SERVICE.

The launch service is still carried out under contract and continues to be most satisfactory.

PATIENTS' VISITORS.

Despite the decreasing number of patients the number of visitors continues to be relatively high. The fact that relatives and friends can visit frequently is a great comfort to the patients and is a very big factor in keeping them contented.

Regular visits were made by the clergy of various denominations and the Salvation Army continued their regular quarterly visits which included a Christmas concert and gift distribution. The Sisters of Mercy from the Mater Misericordiae Hospital in Brisbane again distributed gifts at Christmas time.

The Christmas–New Year period is always a time of great activity at Peel Island and as well as the visits listed above Christmas cheer was distributed by the Relatives and Friends Association and by the Toowong Sub-Branch of the R.S.S.A.I.L.A. and the Elsie Kelly Concert Party provided an excellent Christmas concert and party. All of this is, of course, in addition to the Christmas Eve and New Year's Eve parties provided for the patients and staff by this Department.

Several concert parties have provided entertainment for the patients again this year, the names of the parties being:—

The Mrs. Mauld Concert Party.
The Advacs Concert Party.
The Brisbane Municipal Concert Band.

Once again this year an Anzac Service was conducted by members of the Toowong Sub-Branch of the R.S.S.A.I.L.A.

PATIENTS' AMENITIES.

The patients are provided with many amenities to compensate them for their isolation. This year extensive renovations were carried out to the player piano and the billiard table, both of which provide many hours of recreation and pleasure.

MISCELLANEOUS.

The fact that the Hospital for the Treatment of Hansen's Disease is on an island leads to a great many activities not directly concerned with the hospital itself.

Of recent years the coral reefs around the island have been a source of much interest to zoologists and this year was no exception. A Fulbright Scholar (Mr. Patten) was given accommodation and facilities on two occasions to make a study of the coral formations.

P.M.G. linesmen and technicians have been busy on Peel Island this year and accommodation was provided on several occasions to groups servicing telephone lines and installations.

On two occasions boating accidents have necesitated giving medical attention and accommodation to persons burned or injured. During almost every spell of heavy weather assistance (fortunately usually only minor in nature) is rendered to many persons who become stranded in small boats.

GENERAL.

Again this has been a successful year closing with a population of only 14 active cases. Two arrested cases are due for early discharge in the new financial year and there remain three voluntary patients. Many of the cases listed as active are progressing very well and there is promise of still further reductions in the population in the coming year.

(2) HANSEN'S DISEASE IN THE ABORIGINAL POPULATION.

Table XII. shows the statistics of aboriginal patients with Hansen's disease during the year. Five patients were admitted while two were discharged and one died. There were no readmissions and this is a tribute to the efficacy of prolonged treatment. In the past, when no effective drugs were available, most aboriginal patients had at least one relapse and when in that state could have infected others, particularly children. There seems little reason to doubt that Hansen's disease, once a fairly serious problem in aboriginals, who are racially susceptible, is no longer a hazard in this State, where aboriginals live in settlements and are under constant observation.

TABLE XII.

SHOWING ADMISSIONS AND DISCHARGES, FANTOME ISLAND.

—	Males.	Females.	Total
Inpatients at 1st July, 1957	19	5	24
Admitted	4	1	5
Discharged	2	..	2
Died	1	..	1
Remaining 30th June, 1958	20	6	26

Patients at Fantome Island receive the same standard of care as white patients. A doctor visits regularly from Palm Island (a few miles away), while specialist services are readily available in Townsville. Nursing care is given by devoted members of the Order of Franciscan Missionaries of Mary, who have earned the affection of all patients.

Aboriginals are encouraged to follow some useful occupation or hobby, and film evenings are frequently held.

SECTION OF ENTHETIC DISEASES.

Medical Officer in Charge: GEOFFREY HAYES, M.B., Ch.M. (Syd.).

Medical Officer: BEATRICE WARNER, M.B., B.S. (Melb.).

One thousand and eighteen cases of venereal disease were notified during the year as compared with 995 in the previous twelve months.

This represents an incidence of 0·726 per 1000 mean population as compared with 0·721 in the previous year and with 0·506 in 1951–52, the lowest ebb of incidence. This gradual rise in incidence over the past five years parallels experiences in other parts of the world and is disturbing following upon first experiences with antibiotics which at the time seemed to be the answer to what was till then the most ubiquitous and consistent of public health problems.

Of these 1,018 notifications, 818 were males and 200 females as compared with 803 and 192 respectively in the previous year.

Eight hundred and forty-one were diagnosed as suffering from gonorrhoea and 86 from syphilis, as compared with 813 and 71 respectively in the previous year.

Cases of early syphilis (primary and secondary), which represent the infectious stages, were 50 as compard with 24 last year.

Table XIII. dissects the incidence of notified venereal disease in Queensland for the past 12 months:

TABLE XIII.

NOTIFIED VENEREAL DISEASE IN QUEENSLAND, 1957–58.

—	Metropolitan.		Outside Centres.		Whole State.		Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
Gonorrhoea—							
Unspecified	1	2	23	2	24	4	28
Acute	574	80	98	17	672	97	769
Sub-acute	..	1	3	4	3	5	8
Chronic	..	14	7	11	7	25	32
Ophthalmia	..	..	2	1	2	1	3
Vulvo-vaginitis	..	1	..	..	..	1	1
	575	98	133	35	708	133	841
Syphilis—							
Unspecified	..	4	2	1	2	5	7
Primary	18	1	11	2	29	3	32
Secondary	4	4	4	6	8	10	18
Tertiary	6	..	..	1	6	1	7
Latent	8	6	1	..	9	6	15
Neuro	2	2	1	1	3	3	6
Pre-natal (congenital) ..	1	..	..	..	1	..	1
	39	17	19	11	58	28	86
Soft sore	9	..	..	..	9	..	9
Venereal warts	80	..	..	..	80	..	80
Ulcerative granuloma ..	..	..	..	2	..	2	2
Syphilis & gonorrhoea ..	..	..	..	..	..	..	..
Syphilis & warts	..	..	..	..	..	..	..
	703	115	152	48	855	163	1,018
	818		200		1,018		
	1,018						

Notifications from centres outside Brisbane are shown in Table XIV. and it will be seen that Thursday Island (60), Cairns (22), Townsville (17) and Mackay (20) show definite evidence of the impact of the venereal diseases in the South-West Pacific Area when centres like Toowoomba, Warwick and Ipswich can muster only 6 altogether. It is to be hoped that a better awareness will be displayed when the next World Health Organisation Seminar on Venereal Diseases is held.

TABLE XIV.

CENTRES OF NOTIFICATION OF VENEREAL DISEASES OUTSIDE THE METROPOLIS.

Centre.	Males.	Females.	Total.
Ayr	3	..	3
Babinda	1	..	1
Blackall	2	..	2
Bundaberg	1	1	2
Cairns	19	3	22
Charters Towers	4	4	8
Cloncurry	2	..	2
Coolangatta	1	..	1
Dalby	2	..	2
Emerald	..	1	1
Goodna	..	1	1
Goondiwindi	2	1	3
Gordonvale	1	..	1
Ingham	3	1	4
Innisfail	1	..	1
Ipswich	4	..	4
Jandowae	..	1	1
Julia Creek	3	..	3
Longreach	1	..	1
Mackay	16	4	20
Mareeba	2	1	3
Maryborough	1	..	1
Mary Kathleen	2	..	2
Mossman	1	..	1
Mount Isa	4	..	4
Murgon	2	..	2
Nambour	1	2	3
Palm Island	1	1	2
Proserpine	1	..	1
Quilpie	..	1	1
Rockhampton	7	..	7
Roma	4	..	4
Southport	1	..	1
Surfers Paradise	3	1	4
Thursday Island	38	22	60
Toowoomba	1	1	2
Townsville	15	2	17
Tully	1	..	1
Winton	1	..	1
Total	152	48	200

Table XV. shows the number of notifications for the past 20 years—from the pre-war and pre-antibiotic year 1938-39—and the incidence per 1,000 population.

TABLE XV.

SHOWING NUMBER OF NOTIFICATIONS OF VENEREAL DISEASES FOR PAST 20 YEARS.

Fiscal Year.	Notifications.	Mean Population.	Incidence per 1,000 Population.
1938–39	1,147	1,008,207	1·127
1939–40	1,091	1,021,426	1·077
1940–41	1,328	1,032,122	1·286
1941–42	1,207	1,036,690	1·164
1942–43	3,101	1,040,433	2·98
1943–44	2,718	1,054,810	2·576
1944–45	2,391	1,068,630	2·24
1945–46	1,309	1,084,125	1·207
1946–47	1,373	1,097,303	1·251
1947–48	1,000	1,114,634	·897
1948–49	846	1,140,816	·742
1949–50	731	1,173,232	·623
1950–51	626	1,207,194	·519
1951–52	627	1,239,868	·506
1952–53	757	1,272,244	·595
1953–54	740	1,300,464	·569
1954–55	741	1,325,336	·559
1955–56	807	1,352,650	·597
1956–57	995	1,380,700	·721
1957–58	1,018	1,403,400	·726

Table XVI. shows the alleged sources of infection and the comparatively negligible factor of the professional prostitute in the spread of the disease:

TABLE XVI.

SHOWING SOURCES OF INFECTION.

Non-Professional	473
Amateurs	246
Not stated	154
Unknown	92
Professional	31
Husband	9
Occupational	8
Wife	2
Parent	2
Mother	1
	1,018

Tables XVII. and XVIII. show the Marital Status and age groupings:

TABLE XVII.

MARITAL STATUS OF PATIENTS.

——	Males.	Females.	Total.
Married	127	53	180
Single	698	46	744
Separated	20	14	34
Widowed	5	7	12
Divorced	..	..	..
Unknown	5	43	48
	855	163	1,018

TABLE XVIII.

SHOWING AGE GROUPS OF NOTIFIED CASES.

Age Group.	Males.	Females.	Total.
Under 1 year	2	1	3
1–5 years	2	2	4
6–10 years	..	..	..
11–15 years	2	2	4
16–20 years	127	30	157
21–25 years	225	23	248
26–30 years	156	27	183
31–35 years	125	14	139
36–40 years	83	8	91
41–45 years	69	7	76
46–50 years	21	3	24
51–55 years	17	3	20
56–60 years	12	2	14
61–65 years	3	..	3
Over 65 years	3	..	3
Unknown	8	41	49
	855	163	1,018

Table XIX. shows the sources of the notifications received; 7·27 from private practitioners as compared with 8·4 per cent. and 9·3 per cent. in the preceding two years, which suggests that either the clinics and public hospitals are attracting cases away from private doctors, which I doubt, or that private doctors are not notifying cases as meticulously as they might. It might here be stressed once again that it is the "case" which is notified and not the individual person by name.

TABLE XIX.

Showing Sources of Notification.

—	Males.	Females.	Total.
Private Doctors—			
Brisbane	14	..	14
Outside Centres	50	10	60
Total	64	10	74
Clinics—			
Brisbane	678	105	783
Outside Centres	13	2	15
Total	691	107	798
Hospitals—			
Brisbane	11	10	21
Outside Centres	89	36	125
Total	100	46	146
Total all sources	855	163	1,018

Ad Hoc Clinics—Brisbane.

There are two clinics, viz., Colchester Street for males and William Street for females. These catered for the bulk of the cases notified (76·9 per cent.) as compared with 75·3 per cent. last year.

The following statistical returns cover the activities of the male and female ad hoc clinics in Brisbane:—

Male Clinic (Colchester Street).

New Cases—	
Total for Year	1,397
Highest Month—January	136
Lowest Month—August	98
Visits—	
Total for Year	11,706
Highest Month—January	1,400
Lowest Month—May	788
Notifications—	
Early Syphilis—	
Primary	17
Early latent	7
Total	24
Late Syphilis—	
Late secondary	2
Late latent	3
Tertiary	1
Total	6
Acute Gonorrhoea	559
Venereal Warts	80
Soft Sore (chanchroid)	9
Injections—	
Bismuth	26
Penicillin	925
Investigations—	
Dark ground tests	29
Smears examined at Clinic	5,022
Smears submitted to Laboratory ..	832
Blood tests submitted to Laboratory	1,760

The bulk of the other work is concerned with the investigation and treatment of non-specific urethritis which is not notifiable but which accounts for approximately 70 per cent. of the work of such a clinic today.

Female Clinic (William Street).

The staff of this clinic, in addition to conducting the ad hoc clinic for females, also carries out weekly examinations of prostitutes at the William Street Examination Rooms and of inmates of Her Majesty's Prison (Female Division).

Returns are as follows:—

NOTIFICATIONS.

—	Women's Clinic.	Examination Rooms (Prostitutes).	H.M. Prison.	Total.
Gonorrhoea—				
Acute ..	45	23	10	78
Chronic ..	13	..	3	16
Treated ..	1	..	..	1
	59	23	13	95
Syphilis—				
Primary ..	1	..	..	1
Secondary ..	2	..	..	2
Latent ..	3	..	2	5
Treated ..	2	..	..	2
	8	..	2	10
		Total	..	105

Other Activities.

—	Women's Clinic.	William Street Rooms.
Total interviews	460	1,763
New cases	169	..
Penicillin injections	187	..
Swabs taken for laboratory examination	592	3,724
Blood taken for laboratory examination	192	129
Cultures taken for laboratory examination	561	33
Patients from whom cultures taken	216	16

SECTION OF FOOD AND DRUGS.

This section implements the parts of the Health Acts dealing with food and drugs, the Food and Drug Regulations, the Milksellers Regulations, the Health (Food Supply) Regulations, the Poisons Regulations and the Health (Insecticide) Regulations. The object of these laws is to ensure the proper sale of wholesome foodstuffs, to ensure that conditions of manufacture are hygienic, to ensure that packing and labelling requirements are carried out and that proper and safe control is exercised over the sale and handling of poisons and drugs.

It has been a very busy year, during which the new Food and Drug Regulations were gazetted. These Regulations are now up to date and are a great improvement on the former Regulations, last gazetted in 1939.

Possibly one of the major items of interest was the gazetting of a new set of Regulations, the Health (Food Hygiene) Regulations, which provide for the hygiene of the sale of foods at retail level. Local authorities have been charged with the implementation of these Regulations and, although it is possibly too early to gauge the full impact of them, evidence to date is that local authorities are undertaking their task with common sense and vigour.

Milksellers Regulations were also re-drafted to keep abreast of modern requirements in handling and dealing with milk and these regulations were also gazetted. It is considered that the new Regulations will result in the attainment of improved hygienic standards in all aspects of the milk trade.

MILK.

The usual full attention has been again given to milk. A staff of two officers is continually engaged in milk-sampling operations at headquarters and in the adjacent country areas, and officers regularly secure samples of milk from both pasteurised milk factories and retail vendors for bacteriological and chemical analysis, whilst regular inspections of the plant and premises of pasteurised milk factories are made. Such duties are also carried out in country towns by district officers and by metropolitan officers on tour. Furthermore, certain local authorities co-operate by submitting regular samples for analysis from milk factories in their respective areas. Results of such inspections and sampling have proved most satisfactory and it is felt that milk supply is of a very high standard in this State.

One of the major developments during the year was a survey by a Rockhampton dairy association of the possibility of inaugurating a regular supply of pasteurised milk to towns along the Central Western railway to Longreach. The Department's district officer has kept in close touch with the scheme and has collaborated with the association. The scheme has now been put into operation and its progress will be watched with interest. However, with the milk being produced at a new modern plant, which came into operation during the year, and its being transported under proper refrigerated conditions, there is no reason why the scheme should not succeed entirely and prove a boon to residents formerly deprived of liquid milk.

The gazettal of the Food and Drug Regulations and the Milksellers Regulations finished the era of pre-dating of seals on bottled milk, both pasteurised and other. The law now requires that the day or the date of the month the milk was bottled must be shown on the seal. Companies generally were quick to gear their plants to the new requirements and few breaches have been detected.

Details of samples secured for bacteriological and chemical analysis are shown respectively in the reports of the Director of the Laboratory of Microbiology and Pathology and of the Government Analyst.

Prosecutions for the sale of milk adulterated with water were successfully undertaken in nineteen (19) instances, resulting in fines totalling £252 6s. and costs of £53 13s. (See Table XX.).

TABLE XX.

PROSECUTIONS FOR SALE OF MILK ADULTERATED WITH WATER—1957–1958.

Date.	Place.	Fines.			Costs.		
1957—		£	s.	d.	£	s.	d.
19th July	Millaa Millaa	10	0	0	1	15	0
19th July	Millaa Millaa	10	0	0	1	15	0
19th July	Kingaroy	26	0	0	5	7	0
27th July	Mount Isa	20	0	0	4	18	0
2nd September	Roma	8	0	0	0	14	0
3rd September	Rosewood	8	0	0	1	15	0
3rd September	Rosewood	9	0	0	1	15	0
6th September	Gympie	12	0	0	1	15	0
6th September	Gympie	12	0	0	1	15	0
12th September	Malanda	14	0	0	1	15	0
23rd October	Palmwoods	17	0	0	7	0	0
27th November	Malanda	10	0	0	5	19	0
29th November	Ingham	5	0	0	1	15	0
29th November	Ingham	5	0	0	1	15	0
10th December	Cairns	9	0	0	1	15	0
12th December	Innisfail	11	6	0	2	9	0
1958							
10th March	Bundaberg	15	0	0	4	18	0
9th June	Southport	40	0	0	3	3	0
20th June	Bowen	11	0	0	1	15	0
	Totals	252	6	0	53	13	0

All complaints in connection with milk were promptly investigated and, where indicated, corrective action was immediately taken. A list of prosecutions for offences by milksellers, other than the sale of adulterated milk, is shown in Table XXI.

TABLE XXI.

MISCELLANEOUS PROSECUTIONS OF MILKSELLERS—1957–1958.

Date.	Place.	Basis of Prosecutions.	Fines.			Costs.		
			£	s.	d.	£	s.	d.
1957—								
11th July	Yungaburra	No lid on measure	9	0	0	1	8	0
11th July	Yungaburra	Carrying water on milk vehicle	9	0	0	1	8	0
11th July	Yungaburra	Vehicle not enclosed	9	0	0	1	8	0
13th September	Mossman	Vehicle not enclosed	2	0	0	0	14	0
13th September	Mossman	No lid on measure	3	0	0	0	14	0
13th September	Mossman	Milk tap not protected	4	0	0	0	14	0
1958—								
11th February	Cairns	Selling milk in dirty bottles	5	0	0	0	14	0
		Totals	41	0	0	7	0	0

Close liaison has again been effected with the Director-General of Education in regard to the free milk scheme for school children and with the Department of Agriculture and Stock and the Brisbane Milk Board with reference to the milk supply generally.

MILK PRODUCTS.

Continual inspections and sampling have been made to ensure the sale of ice cream of the best possible standard and results have been most gratifying. Further desirable improvements are being carried out by the major factories and it is very pleasing to report full co-operation with this Department's requirements.

Sampling of butter has been continued and close liaison effected with the Department of Agriculture and Stock, when results have indicated corrective action.

PRESERVATIVE IN MINCED MEAT, ETC.

Sampling of minced meat and sausages in regard to any breach of the law was again a feature of the year's work. Although there is some evidence of improvement by butchers in the use of preservatives, it is still evident that some butchers are still prepared to break the law, and, despite the penalties imposed, appear to consider that the game is worth the candle. It is not pleasing, therefore, to report that thirty butchers were convicted and fined for the offence of selling minced meat containing preservative (vide Table XXII.) and that one butcher was convicted and fined for selling sausages containing an excess of preservative (vide Table XXIII.). There will be no easing of the Department's pressure to stamp out this practice. With modern means of storing and handling meat, chemical preservatives should belong to the past.

TABLE XXII.

SHOWING PROSECUTIONS FOR ADULTERATED MINCED MEAT—1957–58.

Date.	Place.	Basis of Prosecution.	Fines.			Costs.		
			£	s.	d.	£	s.	d.
1957—								
18th July	Brisbane	Preservative added	15	0	0	7	0	0
22nd August	Ravenshoe	Preservative added	4	0	0	2	2	0
15th October	Brisbane	Preservative added	5	0	0	1	15	0
1958—								
11th February	Cairns	Preservative added	5	0	0	1	15	0
11th February	Cairns	Preservative added	5	0	0	1	15	0
11th February	Cairns	Preservative added	10	0	0	1	15	0
11th February	Cairns	Preservative added	10	0	0	1	15	0
12th February	Cairns	Preservative added	30	0	0	1	15	0
19th March	Brisbane	Preservative added	7	4	0	2	16	0
15th April, 1958	Brisbane	Preservative added	10	4	0	2	16	0
23rd April	Brisbane	Preservative added	5	0	0	0	14	0
24th April	Brisbane	Preservative added	5	0	0	0	14	0
8th May	Brisbane	Preservative added	10	0	0	2	16	0
8th May	Brisbane	Preservative added	10	0	0	2	16	0
8th May	Brisbane	Preservative added	2	10	0	2	16	0
8th May	Brisbane	Preservative added	5	0	0	2	16	0
8th May	Brisbane	Preservative added	5	0	0	2	16	0
8th May	Brisbane	Preservative added	14	0	0	3	3	0
8th May	Brisbane	Preservative added	5	0	0	2	16	0
13th May	Brisbane	Preservative added	5	0	0	2	16	0
13th May	Brisbane	Preservative added	5	0	0	2	16	0
13th May	Brisbane	Preservative added	2	10	0	2	16	0
13th May	Brisbane	Preservative added	5	0	0	2	16	0
19th May	Southport	Preservative added	3	0	0	2	16	0
23rd May	Coolangatta	Preservative added	2	0	0	2	16	0
9th June	Southport	Preservative added	2	0	0	2	16	0
12th June	Malanda	Preservative added	10	0	0	1	15	0
13th June	Rockhampton	Preservative added	10	0	0	3	3	0
13th June	Rockhampton	Preservative added	15	0	0	5	12	0
19th June	Ravenshoe	Preservative added	20	0	0	3	3	0
		Totals	242	8	0	79	16	0

TABLE XXIII.

Showing Prosecutions for Adulterated Sausages—1957–58.

Date.	Place.	Basis of Prosecution.	Fines.	Costs.
			£ s. d.	£ s. d.
5th November, 1957.	Cairns	Excess preservative	3 0 0	1 15 0

Licensed Premises.

Liquor testing at licensed premises was carried out in all parts of the State during the year and, as a result of such activities, five licensees were successfully proceeded against for the offence of selling adulterated spirits. These prosecutions resulted in fines of £50 and costs of £10 17s. (vide Table XXIV.).

TABLE XXIV.

Showing Prosecutions for Adulterated Liquor—1957–58.

Date.	Place.	Basis of Prosecution.	Fines.	Costs.
1957—			£ s. d.	£ s. d.
2nd September	Muckadilla	Selling adulterated rum	10 0 0	0 14 0
4th December . .	Glenmorgan	Selling adulterated rum	10 0 0	3 17 0
10th December . .	Monto	Selling adulterated rum	10 0 0	1 15 0
1958—				
31st January . .	Goondiwindi	Selling adulterated rum	10 0 0	2 16 0
18th February . .	Bundaberg	Selling adulterated rum	10 0 0	1 15 0
		Totals	50 0 0	10 17 0

Particular attention was paid to regulation requirements in regard to denaturing of waste beer and to glass-washing. The Food and Drug Regulations of 1957 makes it an offence for any person to sell alcoholic or other liquors in any glass which has not been effectively washed since its last occasion of use. After warnings by departmental officers, it was found that some licensees were not obeying this law and, as a result, several prosecutions were launched. After hearing evidence in the first case (regarded as a test case), the magistrate dismissed the complaint on a point of law and the remaining cases were adjourned pending consideration of an appeal by the Crown. This appeal was lodged and has since been heard by the Full Court. Its decision is awaited with interest. It is very gratifying to report that, despite the above circumstance, the regulation is being generally observed and has been welcomed by the public.

It is again pleasing to report that improvements continue at licensed premises on sports grounds and show grounds.

Bread, Flour, etc.

Standards for breads and allied foods were brought up to modern requirements, when the Food and Drug Regulations were re-drafted. There is a big demand for high protein bread and standards for a protein increased flour and for protein enriched bread were included. This nomenclature is felt to be more pertinent than the term "starch-reduced" which was loosely used to designate such products. As the percentage reduction of starch, created by the increase in protein content, is not of a high order, it was felt that the term "starch-reduced" was misleading and consequently its use is now prohibited. A survey of protein enriched breads on the local market was made and results up to the present have been satisfactory and indicate a desire by the trader to meet the standard. Sight has not been lost of other types of bread and these have been kept regularly under review, whilst flours are checked as opportunity offers.

Aerated Waters, etc.

There is a very large consumption of soft drinks, cordials, etc., in Queensland and samples are regularly obtained from factories to ensure that their products conform to the standards prescribed by the Regulations and to ensure that they are correctly described in their labels.

Miscellaneous Prosecutions.

During the year, seven prosecutions were successfully launched for breaches of the Food and Drug Regulations and resulted in fines of £30 and costs of £11 11s. (vide Table XXV.).

TABLE XXV.

Showing Miscellaneous Prosecutions—1957–58.

Date.	Place.	Basis of Prosecution.	Fines.	Costs.
1957—			£ s. d.	£ s. d.
9th July	Brisbane	Bread not effectively wrapped . .	5 0 0	0 14 0
9th July	Cairns	Dirty bakehouse	4 0 0	1 1 0
1958—				
13th January	Cairns	Dirty food premises	1 0 0	7 0 0
11th February	Brisbane	Fruit not raised 2 feet 6 inches from ground	5 0 0	0 14 0
11th February	Brisbane	Fruit not raised 2 feet 6 inches from ground	5 0 0	0 14 0
11th February	Brisbane	Fruit not raised 2 feet 6 inches from ground	5 0 0	0 14 0
11th February	Brisbane	Fruit not raised 2 feet 6 inches from ground	5 0 0	0 14 0
		Totals	30 0 0	11 11 0

FOOD MANUFACTURING, PROCESSING, ETC.

This is a very vital phase of the section's work. It is essential that a high standard of hygiene and the best possible standard of premises be attained, where the public's food is manufactured and close attention has been paid to factories during the year with commendable improvement. Now that the Health (Food Hygiene) Regulations have passed the sanitary provisions of retail food premises to local authorities for implementation, officers of this section will now be able to concentrate more on food processing and manufacturing premises.

CHECK SAMPLING.

More than 2,000 samples of foods, drugs, etc., were submitted to the Government Analyst for checking as to wholesomeness or their compliance with standards and labelling requirements. Where results indicated the necessity for action, this was always taken. In this regard, there is a happy co-operation between the Department and traders generally.

Continued use has been made of the Laboratory of Microbiology and Pathology in regard to the bacteriological standards for foods, whilst many disinfectants were also submitted for checking. A perusal of the annual report of the Laboratory will indicate the number and range of samples submitted.

GENERALLY.

The matters referred to are only a few of the many duties covered by this section but are representative of its general activities. These activities also include visits to warehouses and auction marts, whilst close liaison has been effected with the Customs Department in connection with the sale of confiscated goods at the Queen's warehouse. Activities of the section have resulted in the destruction of a large quantity of unsound food (vide Table XXVI).

TABLE XXVI.

PARTICULARS OF UNSOUND FOOD DESTROYED 1957–58.

Food.	Weight.			
	T.	C.	Q.	L.
Biscuits	0	0	1	22
Cereals	21	19	0	0
Coconut	0	1	0	14
Confectionery	0	0	3	24
Cordials (Soft drinks, etc.)	0	10	2	12
Dates	0	13	0	8
Fish (Fresh)	0	11	2	15
Fish (Tinned and Preserved)	0	18	3	0
Fruit (Fresh)	2	12	1	5
Fruit (Tinned, Preserved)	4	7	2	24
Jams	0	1	0	25
Lobsters	0	0	1	26
Meat	0	0	0	24
Meat (Pastes)	0	0	1	3
Meat (Tinned)	0	10	2	18
Milk (Condensed, etc.)	0	15	1	16
Miscellaneous	0	0	2	5
Mushrooms (Dried)	0	0	3	13
Nuts	14	16	0	22
Olives	0	9	3	10
Onions	0	5	0	5
Oysters (Dried)	0	0	3	11
Pickles	0	0	2	3
Puddings (Tinned)	0	1	0	20
Sugar	0	16	3	14
Tapioca	0	9	2	1
Tea	0	3	2	8
Vegetables (Fresh)	2	16	2	22
Vegetables (Tinned, etc.)	0	14	0	20
Total	53	19	2	26

In addition, the following foods were destroyed:—An unassessed quantity of confectionery, $4\frac{1}{6}$ gallons of beer and stout, 35 gallons of assorted spirits, 8 gallons of wine, 50 dozen oysters and 149 sand crabs.

During the year, the following drugs were destroyed:—944,000 cigarettes, 4 cigars, 3 cwt. 3 qr. and 26 lb. of tobacco and a small quantity of patent medicines and disinfectants.

FISH.

Two officers are stationed at the Fish Markets, South Brisbane, where the quality of fish being offered for sale is checked and all unsound fish found is condemned and destroyed. In addition, their duties include a regular check on the quality of fish being offered for sale to the public in retail shops.

TABLE XXVII.

SHOWING QUANTITY OF FISH CONDEMNED AND DESTROYED AT THE FISH MARKETS, SOUTH BRISBANE.

Class of Fish.	Weight.			
	T.	C.	Q.	L.
Barramundi	0	2	1	5
Batfish	0	0	1	12
Blackfish	0	0	1	25
Bonito	0	0	1	24
Bream	4	15	0	26
Bugs	0	2	1	6
Catfish	0	10	1	12
Cod	0	2	3	7
Crabs, Mud	5 Crabs.			
Crabs, Sand	1,116 Crabs.			
Cuttlefish	0	0	3	6
Darts	1	0	3	12
Dolphin	0	0	1	4
Dory	0	10	0	23
Flats	0	3	1	20
Flathead	4	11	2	0
Flounder	0	0	2	6
Garfish	0	2	0	5
Haddock	0	2	2	0
Jewfish	0	1	0	5
Kingfish	0	0	2	17
Lobster	0	7	0	22
Long Tom	0	1	0	7
Mackerel	2	10	3	14
Miscellaneous	0	0	2	1
Mixed Fish (Local)	1	17	2	16
Mixed Fish (Imported)	0	2	3	20
Morwong	0	1	3	6
Mullet	37	3	3	8
Oysters	239 bottles.			
Parrot	0	1	0	10
Perch	0	3	1	3
Pike	0	7	2	15
Pink Eye	0	0	2	11
Plaice	0	0	3	26
Prawns	21	19	2	13
Prawns, Peeled	0	0	1	12
Ray	0	11	0	24
Red Emperor	0	1	2	4
Salmon	0	8	1	2
Scallops	0	1	2	0
Schnapper	0	3	3	8
Shark	0	13	0	8
Slade	0	3	0	10
Sole	0	1	0	10
Squid	0	7	1	10
Squire	0	3	3	18
Sweetlip	1	11	3	22
Tailer	0	16	0	24
Tarwine	0	2	1	16
Trevally	1	4	2	13
Trout	0	6	1	26
Trumpeter	0	0	1	27
Tuna	0	0	2	5
Turrum	0	1	1	10
Whiting	0	5	0	0
Total	84	11	1	20

It is gratifying to report that improvements are in hand or proposed not only for the Brisbane Market but also for the country depots.

Details of fish condemned and destroyed at the Brisbane Fish Market are contained in Table XXVII.

POISONS AND DRUGS.

A big percentage of the section's work has been directed to the control of sales of poisons and drugs. Because of the risks inherent on the use of poisons and potent drugs, this phase of the work is of the utmost importance and every effort has been made to ensure that poisons and drugs are packed and labelled in a manner informative of the necessary precautions to be observed by the purchaser. The storage and use of poisons have also received attention, and many visits of inspection have been paid to medical practitioners, veterinary surgeons, pharmaceutical chemists and licensed dealers in poisons.

As a result of such inspections a pharmaceutical chemist in a country town was convicted and fined £5 and ordered to pay 14s. costs of court for a breach of the Poisons Regulations in respect of prescriptions for dangerous drugs, whilst another person was fined £5 and ordered to pay 14s. costs of court for using a false name and address in an endeavour to secure dangerous drugs. In addition, much corrective action was taken to remedy minor breaches during inspections.

The trade generally is very appreciative of the dangers of poisons and the Department enjoys a remarkable degree of co-operation. Our advice is frequently sought and the trade reciprocates by proffering us the valuable experience of its technical experts.

Check samples of various preparations have been regularly obtained, whilst new drugs, poisons and insecticides coming on to the market have received scrutiny with a view to the conditions of sale, packing and labelling.

A major task undertaken during the year has been the re-drafting of the Poisons Regulations. Our present schedules are inadequate to cover the flood of new drugs coming on to the market and to meet these, it was found necessary to revise completely all the schedules and to adapt the regulations to present-day requirements. At the same time, opportunity was taken to secure considerable uniformity with other States. It is confidently expected that the re-drafted regulations will be gazetted early in the coming fiscal year.

SECTION OF ENVIRONMENTAL SANITATION.

Most of the law relating to environmental sanitation is administered by the Local Authorities, and the Director-General, who is responsible to the Minister for the administration of "*The Health Acts,* 1937 *to* 1955," has a supervisory role. His officers visit most parts of the State during the year and submit reports on the conditions found and on the activities of Local Authorities, each of which is guided by its medical officer of health and in many instances by its health inspector.

The medical officer of health is required to submit an annual report to the Director-General and each inspector a quarterly report.

The Director-General, therefore, has three sources of information and these show that generally local authorities are accepting the responsibilities placed on them, and that the degree of success in their efforts depends largely on the medical officer of health and inspector working as a team.

The medical officer, because of his knowledge of disease and his close association with its occurrence, can direct the efforts of the health inspector who has the actual field work to do. By his administration of the various regulations for the prevention of disease during house-to-house inspections, the inspector is able to locate defects and have them remedied before trouble arises, but if the inspector has his time occupied by attending to complaints or extraneous duties, his efforts cannot be nearly so successful as if he can make systematic house-to house inspections.

It is, therefore, mainly on the health inspector that the local authority relies for the satisfactory performance of its health programme.

The distribution of health inspectors in this State is as follows:—

Brisbane City Council	33
Cities and Towns	39
Shires (1 or more inspectors)	33
Joint Areas (more than 1 Local Authority)	26
Total	131

This is a slight increase from last year, but it is pleasing to report that the distribution of these officers gives the services of an inspector to almost every area where these services are desired. It is not reasonable to expect that some of the distant local authorities with very sparse populations appoint an inspector. However there are one or two local authorities in more settled parts of the State who have not even the part-time services of a health inspector. With additional responsibility in food hygiene having been placed on the local authorities, and the increase of populations in some joint areas, it would appear that the time has arrived for giving consideration to a redistribution of health inspectors. It was felt previously that some distribution may have been necessary, but hardly justifiable while so many areas in the central and north-western parts of the State, had no inspector. At first it was a shortage of qualified men followed by a reluctance on the part of suitable applicants to serve in distant parts. Now that these areas at last have found men willing to serve, a redistribution may be possible.

NIGHTSOIL REMOVAL AND DISPOSAL.

Generally the collection, removal and disposal of nightsoil in unsewered areas is by the double-pan system, and appears to be reasonably well conducted. Most of this work is done by contractors to the local authorities, and it naturally follows that, in order to keep running expenses to a minimum, evasions do take place. The alert inspector quickly stops this. Where local authorities undertake this service themselves by day labour, it is rare to have any trouble.

This system of nightsoil disposal can never be regarded as entirely safe. The possibility of fly-borne disease always exists, and it is pleasing to report that more local authorities are considering sewerage to replace the pan systems. Sewerage is often costly, but the advantages and convenience of the water carriage system are well worth paying for.

REFUSE COLLECTION, REMOVAL AND DISPOSAL.

This essential service is the one where, perhaps local authorities generally, could do much better than at present.

The collection and removal of refuse is generally regularly carried out, and the only defects reported are in those local authorities still operating on the wartime expedient of having householders place the garbage can on the street for collection. Fortunately it is far from general and it is believed that if the councils concerned really considered the matter, they must realise that there are a number of reasons why the regular weekly service is never completely satisfactory.

But the most noticeable neglect is in the disposal of the refuse, which is generally by tipping into a gully or on to low-lying land or into a trench. Once tipped, however, it is, all too frequently, not covered. When this is reported to the local authority, the reply, very usually, is that it will be covered when a bulldozer is next in the vicinity of the tip.

To prevent most of the fly breeding which takes place in these tips, the refuse should be covered at the end of each day's tipping, at least, if it cannot be covered as it is tipped.

PLAGUE PRECAUTIONS.

The principal aims of "The Plague Prevention Regulations, 1944" are the destruction and starvation of rats and to deny them harbourage. The original Regulations of which the present Regulations are merely a slightly amended version, were framed before it was known that rats and other rodents were responsible for the spread of such diseases as murine typhus and leptospirosis. Nevertheless the implementation of these Regulations by the local authority can do much to prevent, not only bubonic plague, but other diseases such as these.

Most local authorities see that any new building is constructed so as to deny rats any harbourage therein. But it is only by regular house-to-house inspections that harbourages created after the construction of the building can be detected.

Many local authorities make free rat bait available to ratepayers. This is a useful step in rodent control, provided too much reliance is not placed on this method. Poisoning and trapping should be used in conjunction with building them out and keeping them from food. The delivery of free bait to any premises should be accompanied by a visit from an inspector to advise on methods of rat proofing.

Although bubonic plague has not been known in this State for many years, a close watch is kept for its possible appearance in rats, and smears from rats killed are examined for *Pasteurella pestis.*

Most local authorities on the coast, particularly the seaport cities and towns employ men to keep a check on rodents, and the following local authorities report weekly on the number of rodents killed in their areas, and table shows the results of their activities.

TABLE XXVIII.

Town or City.	Rats.	Mice.
Brisbane	45,735	5,176
Bundaberg	273	..
Cairns	1,703	373
Gympie	142	..
Ipswich	639	..
Mackay	2,015	980
Maryborough	625	..
Rockhampton	1,535	..
Townsville	3,127	59
Total	55,794	6,588
Total all rodents ..	62,382	

Mosquito Eradication.

The eradication of all mosquitoes in many areas in this State would be a lengthy and costly procedure but much can be done by local authorities to eradicate the known vectors of disease, and reports indicate that they are trying to control the breeding of the dengue vector, *Aedes aëgypti,* by the screening of tanks. But more house-to-house inspections are necessary to locate the other incidental breeding places of this species as well as the usual breeding places of the vector of filariasis, *Culex fatigans.* This species breeds in polluted waters and failure to properly dispose of household waste waters can provide it with ideal breeding places. The species is only too commonly known throughout the State.

The Government continued the payment of a 50 per cent. subsidy on all works designed for the permanent eradication of mosquitos.

Table XXIX shows the amount of subsidy granted throughout the year.

TABLE XXIX.

Showing Treasury Subsidies Granted to Local Authorities for Mosquito Eradication Purposes During the Financial Year 1957–58.

Local Authority.	Amount £	s.	d.
Brisbane City Council	94,520	0	0
Cairns City Council	7,280	0	0
Ipswich City Council	15,744	0	0
Rockhampton City Council ..	17,411	0	0
Toowoomba City Council	1,250	0	0
Townsville City Council	7,449	0	0
Bowen Town Council	179	15	7
Dalby Town Council	6,685	0	0
Redcliffe Town Council	25,694	19	4
Atherton Shire Council	400	0	0
Kingaroy Shire Council	1,135	0	0
Mareeba Shire Council	200	0	0
Murgon Shire Council	2,930	0	0
Total	180,878	14	11

Camping Areas and Seaside Resorts.

"The Camp Regulations of 1949" were promulgated in an effort to protect the holiday camper. These Regulations provide the minimum requirements for water, for sanitary conveniences and for refuse disposal, which are essentials to a reasonably healthy camp life. The attitude of local authorities varies according, principally, to the number of campers accommodated in the areas. Most of those receiving large numbers of campers make a serious effort to provide the necessities and some provide such comforts as hot water, bathing facilities and laundries. Where the numbers of campers are small, the local authorities display little interest and it is difficult for them to provide water and sanitary conveniences.

Departmental officers, as usual, inspected all beach camping areas over the Christmas—New Year Period.

Water Sampling.

The dry spell which affected many parts of the State this year caused unusual activity for this section of the Department, due to so many people seeking alternative sources of water for human consumption. This service is very helpful to the people of the State. The results of chemical and bacteriological samples taken at the same time can give much information as to whether or not a water is suitable or fit for human consumption. But it should be clearly understood that if one such sampling indicates that the water is safe, it cannot be taken as a guarantee that the water is safe for all time. All it indicates is that at the time of sampling, the water was apparently safe. It must be recognised that pollution of a supply may be intermittent and consequently one sample may fail to show evidence of pollution.

HOTEL LICENSING.

The inspection of licensed premises to see that the hygiene of these premises is to the standard required by both the Liquor Acts and the Health Acts, has continued throughout the year, and our officers' reports are submitted to the Licensing Commission, who usually serve any notice required for the remedying of defects.

Departmental officers have, whenever required, co-operated with police officers and Licensing Commission inspectors. Many plans and specifications of new hotels or improvements or alterations to licensed premises are submitted to this Department for comment.

PAINT.

It now seems evident that "*The Health Act Amendment Act of* 1955" which was proclaimed on 16th January, 1956, presented no insurmountable difficulties to paint manufacturers and vendors. It is unusual for any household paint to be found containing any lead. The exception is one pigment which, in the course of manufacture, is sometimes contaminated with small quantities of lead.

The full benefit of this legislation will not be fully felt for years to come. In the meantime, the old home, often neglected, whose lead paint is badly weathered, presents the greatest problem. Our first knowledge of such conditions is often a report from a laboratory indicating possible plumbism in a child.

When this happens samples of paint are scraped from the premises on which the child lives. When it is found to be exceeding five per cent of soluble lead, the owner is required to remove all paint which breaches the law.

TOYS.

The legislation prohibiting the sale of any toy containing either metallic lead or lead in the paint is complementary to the prohibition of lead pant in and about homes, and is part of our effort to keep lead from children.

Efforts during the past year have had the effect of making more manufacturers, agents and retailers of toys more aware of the law with the result that few toys with the lead were sold in Queensland.

It has been claimed that the children of this State have been deprived of many attractive toys. This may be true, but it must be pointed out that at no time have children been deprived completely of toys and it is considered that any small sacrifice now will be to the benefit of the health of children.

Overseas manufacturers have shown considerable interest in our legislation and some of them have demonstrated that it is possible to manufacture toys without using lead in the paint.

DISTRICT OFFICERS' REPORTS.

Toowoomba District.—Nightsoil services were generally conducted in a satisfactory manner. Most faults noted for correction were of a minor nature and were easily adjusted at the time.

Major improvements in sanitary depots, tipping areas and services have been carried out in some centres and are either planned or under way at others.

Some refuse tips, especially in the smaller country centres and outlying sections of the district are not well conducted, mainly due to the difficuty in maintaining a constant supply of suitable covering material and the indiscriminate tipping of rubbish by the public.

Toowoomba, Warwick and Goondiwindi are the only centres in the district with sewerage, but schemes are proposed or under consideration for St. George, Stanthorpe, Roma, Dirranbandi and Bollon.

Reticulation of water was completed at Tara, Chinchilla and Miles, while the Jandowae scheme should be completed during this coming year. Reticulated supplies are planned for Thallon, Bell and Warra, and the possibility of reticulated water at Meandarra is being investigated.

Rockhampton District.—It is pointed out that there are places in this district where cesspits are in use and it is considered that a pan system of removal should be instituted.

One local authority has extended its pan system of nightsoil removal.

Generally the collection, removal and disposal where it is practised, is satisfactorily carried out.

Refuse disposal, by whatever system used, appears to be unsatisfactory, in that sufficient covering material is not regularly supplied.

The townships of Clermont and Capella now have reticulated water supplies.

Mackay District.—Reports indicate that the collection, removal and disposal of nightsoil are satisfactorily carried out in this district.

During the heavy flooding of Mackay in February, many earth closets were washed away or damaged. These were quickly replaced by volunteer labour and no epidemic resulted.

During the same floods, many sewer manholes were forced open by pressure within the sewers and sewage was distributed over a large area. The City Council promptly cleaned up and disinfected this area.

Very slow progress is being made in the improvement of Mackay sewerage. Work has not yet commenced on the treatment works and raw sewage is still being discharged into the Pioneer River.

It is proposed to overcome the difficulties experienced in the burial of nightsoil at Proserpine by the construction of a nightsoil digestor constructed as the first part of the proposed sewage treatment works. Plans are under consideration.

Townsville District.—Sanitary services appeared to be conducted in a satisfactory manner. Manpower shortage still appears to be the prime cause of any breakdown in these services, as native labour has to be engaged, particularly in western areas.

In Townsville the number of nightsoil removal services has increased by 251 while only 200 premises have been connected to sewerage.

During the year a new sanitary depot was put into operation at Ingham and consideration is being given to the selection of a new depot site at Townsville.

Refuse services appear to have been conducted in a satisfactory manner, the most common fault being the indiscriminate dumping around the tips by the public. An endeavour has been made to have the local authorities concerned barricade the tips, and thus allow dumping to take place at the "face" only.

Cairns District.—It is pleasing to report a general marked improvement in the disposal of nightsoil throughout the district. A good system of burial control is now followed in almost all country centres.

Again it must be reported that refuse is not satisfactorily disposed of by any local authority in the district, although the Johnstone Shire Council is facing up to the problem by introducing a trench system of burial, which should prove satisfactory.

Work has now commenced on sewerage for Cairns and the construction of the treatment works is well advanced.

It is intended to improve the water supply at Mossman with a view to installing sewerage later.

Plans are almost complete for sewerage installation at Gordonvale.

New reticulated water supplies were put into use at Yungaburra and Millaa Millaa during the year. The Mulgrave Shire is extending its water reticulation from Stratford to Machins Beach. Plans have been prepared for water supplies to Georgetown and Silkwood.

SECTION OF HOOKWORM CONTROL.

The staff of the Hookworm Control Service, whose headquarters are at Cairns, consists of a microscopist, two qualified field inspectors, and two part-time trained nurses. (One of the latter was detailed for Salk Vaccine work for portion of the year.)

A feature of the past year has been a survey of several mission stations and of some cattle stations in the Gulf area. These had been surveyed infrequently if at all up till now. The incidence of hookworm found in this area shows the need for better sanitation, for more health education, and for more frequent surveys.

For example, at Mitchell River Mission, of 341 aboriginals of all ages examined 222 (64 per cent.) were positive for hookworm. At Mornington Island, 221 aboriginals (71 per cent.) were positive. On the Gulf cattle stations surveyed, of 393 aboriginals examined, 165 (42 per cent.) were positive. On the other hand, Doomadgee Mission, in the same rainfall and geographic area, was found to be almost free of the disease.

A survey was also carried out on several islands of Torres Straits, Kubin Island was the only one shown to have a high infestation rate. Palm Island (off Townsville) has been surveyed on many occasions since 1924, when 84 per cent. positives were obtained. The survey last year showed an overall infestation rate of 17 per cent., which is still too high for satisfaction but represents a reduction which is due to improved sanitation on the settlement.

In isolated areas, it is now the rule to check the haemoglobin content of children found positive. If the figure is less than 8·5 grammes (60 per cent.), the child is given a course of iron therapy, and the necessary drugs are carried by the inspector who is making the survey. In this way, it is hoped to prevent death from other infections (such as gastro-enteritis, measles, whooping cough) in children rendered anaemic by a heavy load of hookworms.

TABLE XXX.

HOOKWORM.

Showing Number of Persons Examined, and Results of Examination and Treatment—1957–1958.

Persons, Location.	Number Examined.	Number Positive.		Per cent. Positive.		Results of Treatment.		
		Hookworm.	Other Worms.	Hookworm.	Other Worms.	Cured.	Not Cured.	Unspecified.
A. White Population—								
Pre-School Children—								
Cairns	29	1	1	3·4	3·4	1	. .	. .
Innisfail	8	1	. .	12·5	. .	1	. .	. .
Tully	3	. .	. .	. .	. .	. .	. .	. .
Ingham	2	. .	. .	. .	. .	. .	. .	. .
Yarrabah Mission	2	. .	. .	. .	. .	. .	. .	. .
Mossman	2	. .	. .	. .	. .	. .	. .	. .
Daintree	2	. .	. .	. .	. .	. .	. .	. .
Bloomfield River	2	. .	. .	. .	. .	. .	. .	. .
Cooktown	3	. .	. .	. .	. .	. .	. .	. .
Hopevale Mission	2	. .	. .	. .	. .	. .	. .	. .
Coen	1	. .	. .	. .	. .	. .	. .	. .
Magoma Station	4	. .	. .	. .	. .	. .	. .	. .
Kalpawar Station	1	. .	. .	. .	. .	. .	. .	. .
Normanton	37	. .	2	. .	5·4	. .	. .	. .
Doomadgee Mission	2	. .	. .	. .	. .	. .	. .	. .
Mitchell River Mission	2	. .	. .	. .	. .	. .	. .	. .
Mornington Island Mission	4	. .	. .	. .	. .	. .	. .	. .
Mabuiag Island	1	. .	. .	. .	. .	. .	. .	. .
Lotus Vale Station	1	. .	. .	. .	. .	. .	. .	. .
Palm Island Settlement	8	. .	. .	. .	. .	. .	. .	. .
Total (Pre-School)	116	2	. .	2·0	. .	. .	. .	. .
School Children—								
Cairns	569	6	41	1	7·2	2	4	. .
Innisfail	1	. .	. .	. .	. .	. .	. .	. .
Tully	37	5	. .	13·5	. .	5	. .	. .
Yarrabah Mission	3	. .	. .	. .	. .	. .	. .	. .
Mona Mona Mission	1	. .	. .	. .	. .	. .	. .	. .
Mossman	4	1	. .	25	. .	1	. .	. .
Daintree	3	. .	1	. .	33·3	. .	. .	. .
Bloomfield River	8	. .	. .	. .	. .	. .	. .	. .
Cooktown	1	. .	. .	. .	. .	. .	. .	. .
Coen	4	. .	. .	. .	. .	. .	. .	. .
Magoma Station	4	. .	. .	. .	. .	. .	. .	. .
Normanton	79	3	3	3·8	3·8	3	. .	. .
Doomadgee Mission	2	. .	. .	. .	. .	. .	. .	. .
Mornington Island Mission	2	. .	. .	. .	. .	. .	. .	. .
Mabuaig Island	1	. .	. .	. .	. .	. .	. .	. .
Palm Island Settlement	26	. .	1	. .	3·8	. .	. .	. .
Total (School)	745	15	. .	2·0	. .	. .	. .	. .
Other Persons—								
Cairns	55	4	3	7·2	5·4	4	. .	. .
Innisfail	3	. .	. .	. .	. .	. .	. .	. .
Yarrabah Mission	3	. .	. .	. .	. .	. .	. .	. .
Mossman	15	1	. .	6·6	. .	1	. .	. .
Daintree	10	. .	. .	. .	. .	. .	. .	. .
Cooktown	7	3	. .	42·8	. .	3	. .	. .
Mona Mona Mission	3	1	. .	33·3	. .	1	. .	. .
Magoma Station	2	. .	. .	. .	. .	. .	. .	. .
Normanton	45	. .	1	. .	2·2	. .	. .	. .
Doomadgee Mission	12	. .	. .	. .	. .	. .	. .	. .
Mitchell River Mission	8	1	. .	12·5	. .	1	. .	. .
Mornington Island Mission	6	1	. .	16·6	. .	1	. .	. .
Mabuiag Island	2	. .	. .	. .	. .	. .	. .	. .
Palm Island Settlement	39	. .	. .	. .	. .	. .	. .	. .
Hopevale Mission	2	. .	. .	. .	. .	. .	. .	. .
Total (Other)	212	11	. .	5·2	. .	. .	. .	. .
Total (All Ages)	1,073	28	. .	2·6	. .	. .	. .	. .

TABLE XXX—*continued.*

HOOKWORM—*continued.*

SHOWING NUMBER OF PERSONS EXAMINED, AND RESULTS OF EXAMINATION AND TREATMENT—1957–1958—*continued.*

Persons, Location.	Number Examined.	Number Positive.		Per cent. Positive.		Results of Treatment.		
		Hook-worm.	Other Worms.	Hook-worm.	Other Worms.	Cured.	Not Cured.	Unspecified.
B. ABORIGINAL POPULATION—								
Pre-School Children—								
Cairns	43	15	..	34·8	..	1	14	..
Innisfail	1	..	..	..	..	..	..	..
Tully	7	3	..	42·8	..	..	3	..
Yarrabah Mission	127	1	23	0·7	18	..	1	..
Mossman	42	20	..	47·6	..	8	12	..
Daintree	14	2	..	14·2	..	2	..	..
Bloomfield River	29	12	..	41·3	..	3	9	..
Cooktown	3	2	..	66·6	..	1	1	..
Hopevale Mission	40	6	2	15	5	4	2	..
Coen	8	2	..	25	..	1	1	..
Normanton	24	8	..	33·3	..	..	..	8
Doomadgee Mission	31	2	12	6·3	38·7	1	1	..
Mitchell River Mission	46	32	2	69·5	4·3	..	..	32
Mornington Island Mission	53	44	..	83	..	..	..	44
Mabuiag Island	31	1	..	3·2	..	..	..	1
Kubin Island	12	4	..	33·3	..	..	..	4
Boigu Island	34	1	..	2·9	..	..	..	1
Dauan Island	5	..	..	..	..	..	..	..
Saibai Island	28	1	..	3·5	..	..	..	1
Palm Island Settlement	199	27	38	13·5	19	9	18	..
Normanton Area—								
Cattle Stations	46	21	6	45·6	13	..	..	21
Total Pre-School	823	204	..	24·8	..	..	..	..
School Children—								
Cairns	115	33	2	31·4	1·9	6	27	..
Innisfail	3	..	..	..	..	..	..	..
Tully	37	14	..	37·8	..	..	14	..
Yarrabah Mission	140	4	31	2·8	22·1	1	3	..
Mossman	41	19	..	46·3	..	6	13	..
Daintree	19	5	..	26·3	..	..	5	..
Bloomfield River	58	28	..	48·2	..	9	19	..
Hopevale Mission	79	29	11	36·7	13·9	24	5	..
Coen	27	13	1	48·1	3·7	2	11	..
Normanton	25	13	8	52	32	3	..	10
Doomadgee Mission	100	..	23	..	23	..	..	..
Mitchell River Mission	102	88	21	86·2	20·5	..	..	88
Mornington Island Mission	80	66	1	82·5	1·2	..	..	66
Mabuiag Island	71	8	2	11·2	2·8	..	..	8
Kubin Island	31	17	2	54·8	6·4	..	..	17
Boigu Island	48	2	..	4·1	..	..	..	2
Dauan Island	24	..	..	..	..	..	..	..
Saibai Island	67	..	1	..	1·4	..	..	..
Palm Island Settlement	348	84	109	24·1	31·3	24	60	..
Normanton Area—								
Cattle Stations	61	34	13	55·7	21·3	1	..	33
Croydon	1	1	..	100	..	..	1	..
Total (School)	1,573	458	..	29·1	..	..	..	..
Other Persons—								
Cairns	135	29	1	21·4	0·7	9	20	..
Tully	10	3	..	30	..	..	3	..
Yarrabah Mission	227	8	7	3·5	3	1	7	..
Mossman	66	28	1	42·4	1·5	15	13	..
Daintree	26	8	..	30·7	..	..	8	..
Bloomfield River	78	31	..	39·7	..	7	24	..
Cooktown	10	6	..	60	..	2	2	..
Hopevale Mission	130	33	7	25·3	5·3	51	11	..
Coen	12	3	1	25	8·3	..	2	..
Normanton	48	14	2	29·1	4·1	1	..	13
Doomadgee	77	1	10	1·3	12·9	1	..	..
Mitchell River Mission	193	102	9	52·8	4·6	..	..	9
Mornington Island Mission	175	111	..	63·4	..	..	..	111
Mabuiag Island	116	8	2	6·8	1·7	..	..	8
Kubin Island	63	28	1	44·4	1·5	..	..	28
Boigu Island	91	4	..	4·3	..	..	..	4
Dauan Island	49	2	..	4	..	..	..	2
Saibai Island	116	1	1	0·8	0·8	..	..	1
Palm Island Settlement	727	108	49	14·8	6·7	53	55	..
Fantome Island Settlement	24	2	..	8·3	..	..	2	..
Normanton Area—								
Cattle Stations	286	110	24	38·4	8·3	..	..	110
Total (Other)	2,657	620	..	23·3	..	..	..	..
Total (All Ages)	5,053	1,282	..	25·4	..	..	..	..

DIVISION OF TUBERCULOSIS.

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Assistant-Director: Cyril Evans, M.B., B.S., D.T.M., M.R.C.P. (Lond.).

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Chest Physician, Toowoomba: Gwyn Howells, M.D., M.R.C.P. (Lond.).

The outstanding feature on reviewing this year's work has been the marked rise in the number of cases notified, which have increased by 213 from 639 to 852.

Similar increases, at that time reflected in mortality rates, were recorded after the influenza epidemic at the end of the first World War so the Asian influenza epidemic last year may be responsible for much of this increase by re-activating quiescent cases, and bringing people for X-rays because of post-influenzal chest infections.

The death rate—6·6 per 100,000 population—is substantially unchanged and is so low that little reduction only can be expected. (Table XXXI.)

Staff.

For the first time a trained chest physician is now located at each of the strategic bases in Queensland as envisaged in the original scheme of tuberculosis control for the State.

Buildings.

The building programme continues slowly. During the year the Toowoomba Thoracic Annexe was opened and is now fully occupied. The ward at Cherbourg Aboriginal Settlement was completed, so suitable accommodation for treating aboriginals in southern Queensland is now available.

Work on the Brisbane Chest Hospital and on the Thoracic Annexe at Rockhampton is well forward and completion during the coming financial year is anticipated.

The recalcitrant ward at the Chest Hospital, Chermside, is complete and will shortly be available for segregation of the small number of asocial individuals who cannot be nursed in ordinary wards and who, because of the risk of infection to others, must be segregated.

Chest Clinic, Brisbane.—There is, as yet, no building on the site adjacent to the Chest Clinic, and congestion in all sections is increasing. No space remains which can be put to any further purpose, and it is becoming increasingly difficult to cope with the work involved in follow-up of the very large numbers of patients.

Mass Radiography.

Owing to lack of a trained radiographer the Mobile X-ray Unit did not function for a period of 15 weeks during the early part of this year with consequent marked decrease in numbers X-rayed.

Arrangements to acquire two additional X-ray machines mounted in caravans are well advanced and it is anticipated these units will be delivered early in the new year.

During the year there has been discussion regarding the safety of mass radiography. The report of the National Radiation Advisory Committee on this point is important and includes the following statement: "The Committee formed the opinion that the risk of detectable effects on the population and on the individual from mass X-ray chest surveys is very small indeed and should be accepted at the present time. In this connection the Committee noted that although modern methods of treatment have effected a sharp reduction in the death rate due to tuberculosis, from a public health point of view the disease is still significant—and consequently the Committee is in accord with the policy adopted by the Tuberculosis Control Authorities to continue mass X-ray chest surveys in a form that meets the requirements of the health of the community."

In spite of the very small doses of X-ray involved in miniature mass radiography, every effort is being made to keep the amount of radiation received to a minimum by the following measures:—

Limitation of the X-ray beam to the chest:

Use of high kilovoltage technique where possible, with adequate filtration:

Protection of persons awaiting X-ray from scattered radiation:

Restriction of chest X-rays to positive tuberculin reactors in young people where possible:

Replacement of obsolete lens cameras with modern mirror camera photofluorgraphic units as soon as is practicable. These mirror units reduce radiation by about two-thirds.

So far all mass radiography in Queensland has been on a voluntary basis and limited by the use of only one mobile X-ray machine. The time is now ripe for a much wider scale mass radiography campaign to be undertaken.

TREATMENT.

No change in treatment has occurred during the year. The treatment of tuberculosis must now be regarded as most satisfactory. With few exceptions cases found early are discharged from hospital with sputum negative. Unfortunately pulmonary tuberculosis is still a relapsing disease and relapse may occur at any stage after apparently successful treatment. Relapse most frequently has occurred within the first five years after sanatorium treatment. One satisfactory feature of present day chemotherapy and sanatorium treatment of tuberculosis, however, is that the relapse rate after treatment is reduced. Chest Clinic figures (Table XLVII.) extracted during the year confirm a reduction in the relapse rate after treatment. This reduction is associated with more prolonged continuous chemotherapy. Whereas in 1949-50 most patients received less than six months chemotherapy and in 1953-54 they received a basic course of six months, in the 1955-56 group they received continuous chemotherapy while in Sanatorium and were advised to continue chemotherapy under out-patient supervision at the Chest Clinic after discharge. In fact, in the last group in the table, 10 of the 18 relapses occurred in patients who did *not* take any chemotherapy after discharge or who took their drugs only irregularly.

COUNTRY CLINICS.

As numbers of discharged cases requiring supervision increased, Clinics are gradually being established at country hospitals surrounding the main centres for their follow-up, for consultation on cases in the area, and for case-finding.

During this year regular visits have been made from Brisbane to Cherbourg Aboriginal Settlement, Bundaberg, Maryborough, Gympie and Nambour for this purpose; from Toowoomba to Warwick and Dalby, from Townsville to Ayr, Charters Towers and Ingham, and from Cairns to Innisfail and Mareeba.

These are proving very helpful in reducing the amount of correspondence and clerical work and are much appreciated by both doctors and patients in the centres visited.

NOTIFICATIONS.

As previously mentioned these are increased by 213 when compared with the previous year. (Table XXXV.)

Part of this increase is probably due to the effects of the past year's influenza epidemic in lighting up pre-existing disease, and by producing respiratory symptoms, bringing more people to X-ray. Part is probably normal fluctuation of figures from year to year but it seems likely that the work of the chest physicians is influencing medical men generally to better notification.

Although the majority of the cases were notified by the Chest Clinic, it is noteworthy that that Hospital, Sanatorium, and Repatriation figures all reflect the same increase, which suggests that it is a real increase in cases found and not just better notification.

TUBERCULIN SURVEYS.

The most striking feature of this year's work has been the results of tuberculin surveys of school children undertaken in North Queensland. (Tables XLV. and XLVI.) For a number of years children of school leaving age have been tested in the Brisbane area and an overall positive reaction of 23 per cent. obtained.

This year, testing has been commenced at Rockhampton, Townsville, Mount Isa and Cairns, and in order to expedite matters, a whole school survey has sometimes been done. This has shown a steadily rising positive rate which, in the case of sixteen years old Cairns boys, reaches 87 per cent. positive, a rate attained only in areas of extremely heavy tuberculous infection. There are three possible explanations for this—

(*a*) Widespread consumption of milk heavily contaminated with tubercle bacilli. This is an unlikely cause as very little warm milk is sold in North Queensland.

(*b*) Widespread human tuberculosis. This will be ascertained when the new micro-units at the Thoracic Annexes, Cairns and Townsville, and the new Mobile Units are received.

(*c*) The presence of a non-tuberculous (saprophytic) mycobacterium, which produces a positive tuberculin reaction.

This has never been proved to be the case although it has been suggested as a cause of high tuberculin rates elsewhere.

This matter is receiving further investigation particularly as regards the family contacts of young children with positive reaction, and milk supply, and the area must receive priority for mass radiography surveys.

The tuberculosis rates for North Queensland area as set out in Tables XLV. and XLVI. and are contrasted with those of Brisbane and Toowoomba. The table for Cairns (Table XLV.) shows that there is a steadily rising rate with age, suggesting uniform exposure to the organism causing sensitivity.

CANCER OF THE LUNG.

The number of cases of cancer of the lung occurring appears to be steadily increasing. As the disease is almost uniformly fatal and as its close association with heavy cigarette smoking is now beyond doubt it presents us with the first widely occurring preventable cancer of internal organs.

Large-scale publicity directed towards young people—in particular young men—to discourage cigarette smoking is a most urgent public health necessity.

TUBERCULOSIS ALLOWANCES.

The number of Tuberculosis Allowances being paid is almost the same as twelve months ago.

This is thought by some to be a more sensitive index of the rise or fall of tuberculosis than death or morbidity rates. The rate of Allowance is currently—

	£	s.	d.
Single person without dependants ..	6	10	0
Single person without dependants (in hospital)	4	7	6
Married person with dependent wife ..	10	7	6

(plus 10s. per week for each dependent child).

The provision of a Tuberculosis Allowance continues to play a major role in our attack on this disease enabling, as it does, a breadwinner to stop work and enter hospital for treatment with the knowledge that his family is not entirely unprovided for. This, by removing them from their place of work and from their family until infection has been overcome, limits their chances of infection and so makes dissemination of the disease less likely.

TABLE XXXI.

Showing Number of Hospital Beds Exclusively Available for Tuberculosis Patients.

Chest Hospital, Chermside	186
South Brisbane Auxiliary Hospital ..	157
Westwood Sanatorium	75
Townsville Thoracic Annexe	60
Cairns Thoracic Annexe	50
Toowoomba Thoracic Annexe	50
Thursday Island	95
Repatriation Hospitals—	
Greenslopes	77
Kenmore	76
Total	826

TABLE XXXII.

Showing Number of X-Ray Examinations Carried Out 1957–1958.

——	Chest. Clinic.	Mobile Unit.	Brisbane Hospital.	Toowoomba Hospital.	Thursday Island.	Cairns.	Townsville.	Total.
Micro Film	42,889	22,727	21,231	3,385	..	..	993	91,225
Micro re-rays	3,156	983	707	70	..	..	..	4,916
Other large films	6,657	41	..	1,902	2,911	3,663	4,109	19,283
Total	52,702	23,751	21,938	5,357	2,911	3,663	5,102	115,424
Active cases (sputum positive)	257	19	68	44	13	46	128	575

TABLE XXXIII.

Showing Results of Mobile X-Ray Unit Survey 1st January, 1957, to 31st December, 1957.

Locality.	Number of Micro Films Taken.	Number of Active Cases Found.	Number of Cases per 1,000 Micro Films.	Number of In-active Cases.	Old Cases Redis-covered.	Heart Lesions Noted.	Carcin-oma Noted.	Benign Tumour Noted.	Other Lung Con-ditions.	Bronchi-ectasis Noted.	Pneumo-coniosis Noted.	Under Invest-igation.
Laidley	602	..	..	..	..	..	..	..	..	..	..	..
Esk	616	..	..	..	..	..	..	..	..	..	..	..
Toogoolawah	777	1	1·3	..	..	3	..	..	..	..	..	3
Yarraman	345	..	..	..	..	..	..	..	..	..	..	3
Nanango	1,274	..	..	..	..	..	..	..	..	..	..	7
Kingaroy	3,073	3	.97	..	..	2	..	..	4	2	..	9
Wondai	1,171	..	..	..	..	2	..	..	..	..	..	5
Cherbourg	588	5	8·5	1	..	..	..	..	1	1	..	15
Murgon	1,696	2	1·18	..	..	2	..	..	2	1	..	4
Goomeri	820	1	1·2	1	..	2	..	..	..	..	..	1
Proston	732	..	..	..	..	1	..	..	1	..	..	2
Southport	4,581	6	1·3	..	..	5	..	1	1	..	..	34
Surfers Paradise	791	1	1·26	..	..	..	..	..	6	..	..	6
Burleigh Heads	1,199	1	·83	..	..	1	1	..	8	..	..	11
Coolangatta	2,010	3	1·48	..	..	5	1	..	1	1	..	20
Beaudesert	1,962	1	·5	..	..	4	..	..	3	2	..	9
Beenleigh	515	..	..	..	..	1	..	..	..	..	..	5
Abattoirs	1,257	1	·79	..	1	..	..	..	16	..	..	6
Ford Motor Co.	404	..	..	..	..	2	..	..	12	..	..	2
Stirling Henry	106	..	..	..	..	..	..	..	..	1	..	1
Thos. Borthwick	410	..	..	..	..	..	..	..	8	..	..	2
T. T. College	928	..	..	..	..	..	..	..	6	..	..	..
English Electric	436	1	2·29	..	..	..	..	..	8	..	..	..
Commonwealth Engineering	679	..	..	..	..	1	..	..	1	..	..	1
Brisbane City Hall ..	5,983	1	·18	..	1	7	..	..	41	14	..	19
New Farm Power House	142	..	..	..	..	..	..	..	6	..	..	2
Colonial Sugar	214	..	..	..	..	..	..	..	3	..	..	..
Narm	369	..	..	1	..	..	..	..	..	1	..	6
Rheem	188	..	..	..	..	..	..	..	1	..	..	..
Eagers	375	..	..	..	..	..	..	..	2	..	..	..
Tennyson Power House ..	266	..	..	..	..	..	..	..	6	..	..	..
Eagle Farm	399	..	..	1	2	..	..	..	1	1	..	2
S. S. " Anking " No. 1 ..	90	7	77·7	..	..	..	..	..	..	..	..	5
Tramways Milton ..	458	..	..	..	..	..	..	..	..	1	..	8
G.P.O.	2,606	1	·38	4	1	3	..	..	17	2	..	16
Total	38,062	37	·97	8	5	40	2	1	158	26	..	202

TABLE XXXIV.

Showing Results of Mobile Unit Survey in Certain Queensland Cities and Towns. January 1957 to December, 1957.

Town.	Population 30–6–57.	Estimated Population Over 13 Years of Age.	Number of Films Taken.	Cases Found.
Laidley	1,440	1,000	602	..
Esk	850	590	616	..
Toogoolawah	750	520	777	1
Yarraman	920	640	345	..
Nanango	1,320	880	1,274	..
Kingaroy	4,700	3,250	3,073	2
Wondai	1,300	870	1,171	..
Murgon	1,800	1,270	1,696	2
Goomeri	650	450	820	1
Proston	590	410	732	..
Southport				3
Surfers Paradise	22,800	16,550	8,581	1
Burleigh Heads	(South Coast)	..	..	2
Coolangatta	..	..	..	4
Beaudesert	2,750	1,890	1,962	2
Beenleigh	1,540	1,070	515	..
Total	41,410	29,390	22,164	18

TABLE XXXV.

Showing Sources of Notifications of Tuberculosis, 1956–1957 1957–1958.

——	1956–57.	1957–58.
Hospitals	199	210
Chest Clinic	248	422
Private Practitioners	91	88
Death Certificates	..	11
Sanatoria	36	59
Repatriation Department	33	47
Thursday Island Hospital	24	7
Post Mortem	4	6
Cherbourg Aboriginal Settlement	1	2
Palm Island Aboriginal Settlement	3	..
	639	852

TABLE XXXVI.

Showing Information from Case Register, 1957–58.

——	Brisbane.			Country.			State.		
	M.	F.	P.	M.	F.	P.	M.	F.	P.
Notifications, 1957–58	293	116	409	299	144	443	592	260	852
Cases on Register 1–7–57 and still on Register	1,470	880	2,350	1,457	818	2,275	2,927	1,698	4,625
**Cases added to Register 1957-58	254	105	359	254	133	387	508	238	746
On Register 30th June, 1958	1,724	985	2,709	1,711	951	2,662	3,435	1,936	5,371

M.—Males; F.—Females; P.—Persons.

**Represents net increase after deaths and other removals from Register.

TABLE XXXVII.

Showing Bacteriological Status of Patients when Notified.

—	Brisbane.	Country.	State.
Pulmonary—			
Positive—			
Smear	68	94	162
Culture	117	118	235
Animal Inoculation	32	21	53
Negative—			
Smear	17	32	49
Culture	15	43	58
Animal Inoculation	10	7	17
Not Stated—Results Pending	124	110	234
Death Notifications	..	..	..
Total Pulmonary	383	425	808
Non-Pulmonary—			
Positive	4	2	6
Negative	5	3	8
Not Stated	17	13	30
Total Non-Pulmonary	26	18	44
Total All Forms	409	443	852

TABLE XXXVIII.

Showing Details of Tuberculosis in Migrants, Queensland.

—	British.			Non-British.			Total.		
	M.	F.	P.	M.	F.	P.	M.	F.	P.
Cases prior to 1st July, 1957	95	55	150	141	76	217	236	131	367
Cases, 1st July, 1957, to 30th June, 1958	14	8	22	40	16	56	54	24	78
Total	109	63	172	181	92	273	290	155	445

Rates :

1. Queensland total cases per 100,000 Australian Population = 54·5.
2. Queensland Migrant cases per 100,000 Australian Migrant Population = 38·7.
3. Queensland total cases per 100,000 Queensland Population = 378·5.

Direct comparison is not possible as the distribution of migrants in various States is not known.

Cases are expressed in terms of total known cases, on case register in each group.

TABLE XXXIX.

Showing Number of Deaths from Tuberculosis and Death Rate From Tuberculosis (per 100,000 Mean Population), Queensland.

Year.	Deaths.	Death Rate.
1950	236	19·8
1951	226	18·4
1952	216	17·2
1953	162	12·6
1954	140	10 6
1955	137	10·2
1956	81	5·7
1957	92	6·6

TABLE XL.

Showing Number of Cases on Register and Morbidity Rate (per 100,000 Population), Queensland.*

Year Ending.	Cases on Register.	Morbidity Rate.
30th June, 1952	1,942	154
30th June, 1953	2,569	198
30th June, 1954	3,201	243
30th June, 1955	3,746	279
30th June, 1956	4,263	311
30th June, 1957	4,731	343
30th June, 1958	5,371	378

* Total known cases on register per 100,000 population.

TABLE XLI.

Showing Tuberculin Tests and B.C.G. Vaccination 1957–58.

—	Tuberculin Tested.	Did Not Return.		Positive.		Positive After Previous B.C.G.		Negative.		B.C.G. Given.		B.C.G. Not Given.		Refused all Testing.	
	No.	No.	Percentage.	No.	Percentage.	No.	Percentage.	No.	Percentage.	No.	Percentage.	No.	Percentage.	No.	Percentage.
Chest Clinic	6,661	270	4·0	3,732	56·0	1,953	29·3	2,943	44·1	1,433	48·6	1,490	*50·6	..	..
Schools	7,617	181	2·4	1,758	23·1	284	3·7	5,394	70·8	5,334	98·8	60	1·1	..	..
National Service Trainees	1,447	..	..	583	40·2	..	..	864	59·7	864	100·0	Not known	..	..	..
Teachers Training College	1,728	24	1·3	1,030	59·6	121	7·0	674	39·0	631	93·6	33	4·8	..	..
Thursday Island	1,970	2	0·1	1,470	74·6	..	..	498	25·3	679	100·0	1	0·2	..	..
Cairns	7,149	83	1·1	3,482	48·7	..	..	3,583	50·1	665	18·5	8	0·2	12	..
Townsville	4,264	27	0·6	2,585	60·6	..	..	1,676	39·0	1,501	89·5	8	0·4	..	..
Palm Island	152	..	..	118	77·6	..	..	34	22·4	33	97·0	..	..	..	..
Mornington Island ..	387	5	1·3	125	32·3	..	..	262	67·7	257	98·0	..	..	..	..
Rockhampton ..	991	23	2·3	656	66·2	..	..	312	31·4	220	70·5	36	11·5	..	..
Toowoomba	4,574	58	1·2	1,487	32·5	..	..	3,029	66·2	2,965	97·8	83	2·7	141	..
Total	36,940	673	1·8	17,026	46·0	..	..	19,269	52·1	14,582	75·5	..	..	..	..

* Use of B.C.G. in young children is not advised in absence of contact.

TABLE XLII.

THURSDAY ISLAND—Tuberculin Tests (Mantoux 1–1000 or followed by 1–100 as necessary) and B.C.G. Vaccinations, 1957–58.

Place or Location.	Tuberculin Tested.	Did not Return.		Positive.		Negative.		B.C.G. Given	Did not return or refused B.C.G.
	No.	No.	Percentage.	No.	Percentage.	No.	Percentage.	No.	No.
Chest Clinic Thursday Island	180	2	1·1	155	86·1	23	12·8	204 (incl. neo-natals)	1 (white baby)
Mapoon Mission	206	..	..	166	80·5	40	19·4	40	..
Weipa Mission	169	..	..	131	77·5	38	22·5	38	..
Aurukun Mission	426	..	..	300	70·4	126	29·5	126	..
Edward River Mission	172	..	..	109	63·3	63	36·6	63	..
Mitchell River Mission	299	..	..	168	56·1	131	43·8	131	..
Boigu Island	192	..	..	157	81·7	35	18·2	35	..
Dauan Island	97	..	..	85	87·6	12	12·3	12	..
Saibai Island	229	..	..	199	86·9	30	13·1	30	..
Totals	1,970	2	1·1	1,470	74·6	498	25·3	679	1

TABLE XLIII.

Complications following Vaccinations, 1957–58.

Locality.	Age Group.	Given B.C.G. No.	Local Ulcer.		Glands Closed.		Incised-Draining.		Total Complications.	
			No.	Percentage.	No.	Percentage.	No.	Percentage.	No.	Percentage.
Chest Clinic	0–2 years ..	282	..	..	8	2·83	1	0·35	9	3·19
	3–14 years ..	6,384	3	·28	1	0·09	..	..	4	·38
	Over 14 years ..	1,545	..	..	..	..	..	..	..	..
	Total ..	8,211	3	·03	9	0·109	1	0·012	13	0·158
Thursday Island ..	0–2 years ..	198	1	0·5	..	..	1	0·5	2	1·00
	3–14 years ..	481	..	..	..	..	..	..	..	..
	Over 14 years ..	..	..	..	..	..	..	..	..	..
	Total ..	679	1	0·1	..	..	1	0·1	2	0·29
Cairns	0–2 years ..	50	5	10·0	..	..	..	..	5	10·0
	3–14 years ..	397	99	25·0	..	..	..	..	99	25·0
	Over 14 years ..	218	..	..	..	..	..	..	..	..
	Total ..	665	104	15·6	..	..	..	..	104	15·6
Westwood, Rockhampton	0–2 years ..	..	..	..	..	..	..	..	..	..
	3–14 years ..	..	..	..	..	..	..	..	..	..
	Over 14 years ..	..	..	..	..	..	..	..	..	..
	Total ..	220	51	23·1	3	1·3	..	..	54	24·5
Townsville	0–2 years ..	..	2	0·1	1	..	1	..	4	..
	3–14 years ..	..	..	..	..	..	..	..	..	..
	Over 14 years ..	..	2	0·1	..	..	..	..	2	..
	Total ..	1,758	4	0·22	1	0·05	1	0·05	6	0·34
Toowoomba	0–2 years ..	..	..	..	..	..	..	..	..	..
	3–14 years ..	..	..	..	..	..	..	..	..	..
	Over 14 years ..	..	..	..	..	..	..	..	..	..
	Total ..	2,965	..	..	..	..	..	..	..	..

TABLE XLIV.

SHOWING NUMBER OF TUBERCULOSIS ALLOWANCES BEING PAID IN QUEENSLAND, AT 30TH JUNE, 1958.

——	Male.	Female.	Total.
Number accommodated in tuberculosis institutions	249	65	314
Number not so accommodated	197	73	270
Total on Allowance	446	138	584

TABLE XLV.

POSITIVE TUBERCULIN REACTORS—CHILDREN OF SCHOOL LEAVING AGE.

Area.	No. Tuberculin Tested.	Positive.	Percentage.
Brisbane	7,617	1,758	23·1
Toowoomba ..	4,516	1,487	32·5
Rockhampton ..	401	291	72·3
Townsville	1,871	838	44·2
Mount Isa	190	114	60·0
Cairns	802	578	72·1

TABLE XLVI.

CAIRNS AREA.

DETAILS OF POSITIVE TUBERCULIN REACTORS.

Age Group.	Male Per cent. Positive.	Female Per cent. Positive.	Total Positive Percentage.
5	26	40·9	33·4
6	29	14·3	21·6
7	30	24·2	27·1
8	37	28	32·5
9	38·5	36	37·2
10	47·5	35·6	41·5
11	52·5	48	50·2
12	64	56·5	60·2
13	74	58	66
14	84	74·2	79·1
15	81	67·5	74·2
16	87·5	65	76·2
Total ..	54	44	49·9
Persons ..	2,065	1,996	4,061

TABLE XLVII.

Year.	No. of Cases Discharged as Quiescent.	Relapsed Subsequently (Mainly in First 2 Years After Discharge).	Percentage Relapse Rate.
1949–1950 ..	35	16	45·7
1953–1954 ..	130	33	25·4
1955–1956 ..	211	18	8·5

DIVISION OF INDUSTRIAL MEDICINE.

Director of Industrial Medicine: E. M. Rathus, M.B., Ch.B. (Cape Town).

Assistant: F. H. Stamp.

Acting Officer in Charge—Weil's Disease Control: D. Kennedy, M.R. San.I.

Although the activities of this division are varied covering all aspects of industrial medicine, much of the work consists in constant supervision of suspect groups of workers exposed to various hazards.

This type of approach has led to the uncovering of several cases of early lead poisoning and pneumoconiosis.

A special feature of this division is the method of inspection, which is empowered under the Health Act. The right of entry to factory premises for purposes of inspecting processes, precautions, and arranging for subsequent examinations of workers, allows for very full investigations to be carried out. It is most gratifying to state that in almost all cases the greatest co-operation is obtained from both management and labour.

During the year nearly 100 industrial premises and processes were visited, and reports submitted on potential or actual health hazards. Approximately 150 clinical examinations of workers were carried out for various reasons, and many environmental problems were assessed by recourse to scientific analysis by the Government Chemical Laboratory. These included dust counts, analysis of materials for toxicity, concentration of potentially harmful fumes in the atmosphere, ventilation measurements and other routine estimations requested.

1. Silicosis, Pneumoconiosis or Dust Disease.

It is a truism to state that silicosis is a disease of men who are exposed to stone which is in any way crushed, pulverised or otherwise disintegated. The relative incidence of the disease is one quite definitely related to the particle size of free silica (silicon dioxide) and to the concentration of SiO_2 in the rock.

As a demonstration of the damaging potentiality of free silica, an abrasive soap manufacturing firm was investigated, and three severe cases of silicosis were discovered. These men had all been exposed to free silica (99·9 per cent. SiO_2) of very small particle size (below 2 mu.). Though total enclosure of the processes has been attempted, further improvement is necessary if silicosis is to be prevented.

2. Quarry Workers.

A survey of several quarries led to the discovery of several cases of moderate pneumoconiosis. Two (2) men had been employed all their lives on a single quarry in the Brisbane area, and were found to have radiologically obvious nodular infiltrations of moderately advanced degree. These men were in their late fifties and clinically well. As a result of these preliminary investigations, it is planned to carry out a fuller survey of quarry workers, commencing with the Main Roads Department. A survey of stonemasons in a large monumental works did not uncover any cases, though the men use mechanical chisels. It is quite possible that Queensland climatological conditions are responsible for the low incidence of dust disease in these occupations, as maintenance of free ventilation is obviously easier than in colder climates.

3. Air Pollution.

Preliminary steps for the study of air pollution, popularly known as Smog, have been taken. Initial surveys will depend on dust-fall measurements, and with the co-operation of the Brisbane City Council and other bodies, suitable collecting points will be established.

Mr. G. Lahey of the Government Analyst's Department was sent to Sydney to observe the work of the Division of Industrial Hygiene, and of Mr. J. Sullivan particularly, in this connection.

4. Uranium Mining.

With the advent of the production of uranium oxide at Mary Kathleen, a pattern of necessary examinations and controls of uranium miners and workers will have to be considered. Both radiation levels and toxicity levels of uranium ore and oxides are low and no exposure beyond prescribed limits is expected. However, it is proposed to arrange for X-ray surveys of miners when convenient and for film badge monitoring of miners, mill workers, etc., to assess the situation for future reference. Recent literature suggests that routine blood counts are of little or no value at low levels of radiation exposure, and that personal monitoring is a more reliable index.

A preliminary survey of radon concentrations in mine adits was carried out with the assistance of Mr. Norrie of the Mines Department, and Mr. G. Taylor of the University of Queensland, Department of Physics.

As a result of these steps it was decided to purchase an Alpha air-sampler (CAE Model) which will serve the dual purpose of assessing radon and radium A and C′ in mine atmospheres, and also for exploring accidental contaminations for example in hospitals.

5. Radio-Activity.

The Radio-Active Substances Bill has passed all stages, and is to be implemented without undue delay. A Radiological Advisory Council has been set up and will advise on standards acceptable in the use of radio-isotopes in industry and medicine. There is no doubt that radio-isotopes will find their place in Queensland industry very rapidly and the necessary technicians and skilled operators will have to be trained. A major requirement is a highly skilled inspectorate, suitable equipped. This function has to date, always been carried out by the University of Queensland, Department of Physics, but expansion of the use of these materials may compel establishment of something in the nature of a radiation protection service.

6. LEAD.

Lead continues to maintain its position as chief offender amongst industrial health hazards. Routine testing of men in the lead smelting and storage battery trades reveals many who are absorbing excessive amounts of lead. Both stippling and haemoglobin levels are assessed.

Three cases of lead poisoning were diagnosed during the year, all from battery shops, and all due to some obvious factor such as use of antiquated methods or sheer indifference.

Estimation of coproporphyrin on a quantitative basis as an assessment of toxic or excessive lead absorption amongst lead workers is becoming more favoured, and gratifying results in surveys done by this division have been obtained. A high coproporphyrin III excretion is a warning sign in the trade.

All cases described above showed a rise in stipple cells, marked fall in haemoglobin, increased lead excretion above 0·15 milligram per litre and a high coproporphyrin III excretion. Gratifying results have been obtained in all cases with calcium disodium versenate therapy administered intravenously.

It is considered that many more cases of lead poisoning would eventuate were it not for Queensland's very favourable climate, allowing the use of open buildings throughout the year. Experience shows that in cold countries the incidence of lead poisoning rises with the beginning of winter conditions and the shutting of doors and windows.

7. METHYL BROMIDE.

The intensive fumigation scheme for houses owned by the Queensland Housing Commission for the eradication of the Italian Borer infesting the imported timber, has led to very intense activity on all sides. As prophesied, the only possible harm was to operators, and several cases of methyl bromide poisoning have occurred. All have been mild, except one. This man developed severe epileptiform seizures after an inadvertent exposure due to a loose mask. He was comatose for days, and only expert care saved his life. He has been left with what appears to be permanent cerebellar damage.

A very strict disciplinary system has been evolved for all workers and work continues in the estimation of the hazards involved in this type of exposure.

8. DERMATITIS.

Industrial dermatitis due to various causes was investigated when brought to notice. Amongst the unusual were a severe case due to styrene monomer in the manufacture of fibreglass fishing rods impregnated with this plastic component.

Butter manufacture, surprisingly enough, appears to produce its quota, but it is difficult to pinpoint the causative factor. The salt, greasiness and constant moist conditions of the skin may all play their part.

9. ARSENIC.

Several cases of arsenical dermatitis amongst workers in a wool scour were seen. A survey of urinary excretion levels revealed a remarkable range, and men exposed may obviously excrete 0·3 milligram per litre, and be entirely well. It is impossible to state a reasonable level of excretion for an arsenic worker, as these are so variable, and bear little relation to clinical signs.

10. COAL MINES.

Cases of dermatitis in coal-mines in the Ipswich area were investigated. It was finally determined that cases of allergic dermatitis, due to the itch mite, *Pyemotes ventricosus* Newport, were occurring due to the presence of enormous numbers of these mites as parasites of borers in mine timbers.

A letter on the subject was submitted for publication in the Medical Journal of Australia.

11. CYANIDE AND TRICHLORETHYLENE.

Amongst other hazards investigated were the use of cyanide by jewellers, and precautions used by trichlorethylene workers.

12. PRINTING FIRMS.

A general survey of small printing firms has revealed generally good conditions, and no cases of undue lead absorption have been found. The printing trade today is almost free of this hazard.

13. ARGON ARC WELDING.

Argon arc welding generates ozone in dangerous quantities and several workers developed chest pains when using this process in confined spaces. Contrary to previous teaching, ozone is highly toxic when in as low a concentration as 2 p.p.m., and may produce pulmonary oedema.

14. INTERNATIONAL LABOUR ORGANISATION.

A special analysis of Pneumoconiosis in Mining, Tunnelling and Quarrying was undertaken for the International Labour Organisation as part of a contribution on a National basis.

15. BURDEKIN RIVER BRIDGE.

A special examination of over 50 bridge painters on the Burdekin River Bridge was arranged owing to their general inaccessibility. As a result, several painters were found to be absorbing excessive lead, and recommendations were made accordingly.

16. CARBON MONOXIDE.

Several investigations were carried out at the request of the Commonwealth Department of Health. Among the more interesting of these was the examination of carbon monoxide (CO) concentrations in the holds of ships while using a petrol driven fork lift. This examination revealed concentrations in excess of those recommended for safe exposure. However, when accessory ventilation in the form of large blowers was installed, carbon monoxide figures were so low as to present no hazard. It should be emphasised that the procedure could only be acceptable if a flexible hose was attached to the exhaust and led to the open air, and if forced ventilation were supplied as described. The problem of carbon monoxide and petrol fume concentration obviously increases as the hold becomes filled and on general principles, therefore, the proposal to use a petrol driven fork lift was not recommended.

17. WEIL'S DISEASE CAMPAIGN.

A feature of the 1957 crushing season was again the unsatisfactory commencement of harvesting in May, which was carried out under wet and boggy field conditions following almost continuous rain over the previous five months in all areas. As a result, extensive lodging of cane crops occurred. These conditions persisted until August, when fine weather intervened and continued unbroken until the completion of crushing by all mills north of Tully in November, and by Ingham district mills in early December. Despite the wet and protracted start, this was the earliest finish for many years.

Field control operations were exercised by the staff throughout the mill areas in Tully, Innisfail, Babinda, Gordonvale, and Hambledon Districts, with check visits to the outlying areas of Ingham and Mossman as necessary.

For several weeks the cutting of green cane was the only method by which an adequate cane supply for milling was available and this was permitted on high well-drained areas after consultation with and co-operation by millers and farmers. No harvesting without effective burning and adequate drying-out of the ground surface was permitted on low sections such as river and creek flats, undulating fields, and those in close proximity to swamps. This arrangement, however, was extremely difficult to apply in Babinda area because of the low percentage of high land and considerable discretion had to be used in implementing the regulations, which, if fully imposed, would have resulted in complete shut-down of field and milling operations.

Sporadic cases of leptospirosis were reported from most mill areas but reached epidemic proportions in Babinda area within three weeks of commencement of harvesting. With a progressive improvement in the weather cases diminished rapidly, and ceased to occur during the later months of harvesting.

The prevailing dry conditions in the latter half of 1957 allowed an unprecedented clean-up of harbourages to take place, principally by burning and cultivation. Creeks and gullies and other places where burning-off had not been possible for some years due to unsuitable weather conditions, were thoroughly burnt out, thereby destroying cover and creating generally an unfavourable environment for rat infestation in close proximity to cane fields. As such, a greatly diminished rodent population is expected during 1958. However, continual attention to harbourage eradication and systematic baiting will be required.

Pest Board Activities.—The usual measures for rat control were carried out during the year. In some areas, rat damage was heavy and widespread and caused real concern. Increased baiting activity resulted, though somewhat belatedly. This could have been obviated by continuous organised control, rather than by a sporadic effort when heavy damage became apparent. Unfortunately, effective rat control is neither spectacular nor impressive but calls for considerable time, effort, expense, and continuity. Until this is realised, little improvement can be expected in control measures which have been practised in the sugar areas for over twenty years.

Whilst considerable advances have been made in the field of pest control in recent years, it is regrettable that methods of rodent control have remained more or less static. One pleasing feature in this regard is that pest control officers attached to C.S.R. mills are becoming conscious of the importance of rat control and are carrying out field experiments under local conditions and testing some of the more modern rodenticides.

Harvesting.—For the first season for many years, a surplus of labour was offering and although cutters are, in the main, reluctant to cut green cane, many were forced to do so in order to maintain their employment. This practice, although not favoured by cutter or farmer, is necessary because of demands from the mills to maintain an adequate cane supply for crushing.

As in the past, cutters continued to sacrifice safety for comfort by failing to wear suitable protective clothing. Barracks sanitation sometimes left much to be desired and instances of soil pollution were numerous.

Local Authorities.—As in the past, Local Authorities exercised a measure of control insofar as free poison baits are available to the public on request. Householders are encouraged to eliminate rat harbourages on their holdings. Some improvement in the conduct of refuse dumps has been effected by more suitable methods of disposal. In most shires control is of a limited nature owing to the fact that rodent control personnel are not employed.

TABLE XLVIII.

ANALYSIS OF WEIL'S DISEASE CAMPAIGN.

Mill Area.	Area Harvested.	Cane Crushed.	Total Cane Burned.		Burned under Health Regulations. (Including under 10 Tons per Acre.)	
	Acres.	Tons.	Acres.	Tons.	Acres.	Tons.
South Johnstone	14,042	395,917	13,496	378,195	735	18,349
Goondi	10,115	276,760	9,581	266,537	515	14,111
Mourilyan	10,346	263,069	10,726	261,752	294	1,836
Tully	14,188	394,478	14,020	389,796	4,665	129,941
Babinda	13,286	325,416	12,314	301,588	4,432	108,584
Mulgrave	12,700	355,807	12,644	354,248	5,080	152,400
Hambledon	12,723	330,730	12,683	329,681	413	3,750
Victoria	23,122	696,272	23,086	695,249	155	1,296
Macknade	14,059	408,111	14,046	407,647	293	2,768
Invicta (Ingham Line)	5,773	137,489	5,773	137,482	160	1,515
Totals	130,354	3,584,049	128,369	3,522,175	16,742	434,550

TABLE XLIX.

Analysis of Weil's Disease Campaign.

Mill Area.	Farms Inspected.	Acres Inspected.	Fields Inspected.	Fields Burned.	Canecutters Signed On.
South Johnstone	500	3,317	483	95	467
Goondi	472	3,892	518	63	394
Mourilyan	80	766	92	13	366
Tully	79	577	82	41	670
Babinda	751	6,453	1,040	522	400
Mulgrave	60	501	60	25	647
Hambledon	..	..	..	..	429
Victoria	..	..	..	..	733
Macknade	..	..	..	..	455
Invicta (Ingham Line)	..	..	..	..	94
Totals	1,942	15,506	2,275	759	4,655

TABLE L.

Baits Distributed by Mill Pest Boards for Rodent Destruction, Number and Type.

Mill Area.	Phosphorus. (Bread).	Thallium Sulph. (Wheat).	Other.
South Johnstone	..	1,758,000	15 lb. Phosphorus paste
Goondi	..	1,207,000	10 lb. Phosphorus paste
Mourilyan	650,000	5,646,000	..
Tully	30,000	377,000	..
Babinda	545,000	651,600	..
Mulgrave	..	657,150	..
Hambledon	..	1,037,568	5 lb. " Sorexa "
Victoria	..	2,688,000	..
Macknade	..	2,713,200	..
Invicta (Ingham Line)	..	180,000	..
Mossman	..	860,160	..
Total	1,225,000	17,775,678	

DIVISION OF MATERNAL AND CHILD WELFARE.

Director: H. C. Murphy, M.B., B.S.
Deputy Director: J. McFarlane, M.B., B.S.
Part Time Pre-School Health Officer: A. E. Paterson, M.B., Ch.M.
Superintendent: A. D. Jenkinson, A.T.N.A.
Deputy Superintendent: M. F. Nixon, A.T.N.A.

The Year's Work.

Throughout the State there are now 235 centres and sub-centres, 63 being in the metropolitan area and 172 in the country.

The following sub-centres were opened during the year:—

(1) Koombooloomba on 2nd August, 1957, serviced from Atherton.
(2) Moorooka on 2nd September, 1957, serviced from Woolloongabba.
(3) Norman Park on 13th February, 1958, serviced from South Brisbane Sub-Centres.
(4) Mutchilba on 28th March, 1958, serviced from Mareeba.
(5) Clontarf on 1st April, 1958, serviced from Sandgate.

On 29th September the Honourable the Minister officially opened the new centre at Longreach.

Attendances at Mount Morgan, Chelmer, and Moorooka have been such that extra time has had to be allotted to these centres. The sub-centre at the Rocklea Housing Commission was closed during the year, the sub-centre being transferred to the nearby Moorooka district. Mount Mulligan, in the Mareeba district, was closed owing to the closure of the mine. Approval has been given for the establishment of sub-centres at Talwood and Tarragindi.

The total number of attendances during the year was 443,699, an increase of 25,569 on the record attendances of the previous year.

Staff.

Miss A. D. Jenkinson was appointed Superintendent of Nurses on 27th February, 1958, and Miss M. F. Nixon was appointed Deputy Superintendent on 29th April, 1958.

The number of trained nursing staff is the same as in the two previous years, being 140, of whom 66 are members of the permanent staff and 74 temporary. The staff in the metropolitan area consists of 63, 28 of whom are on the permanent staff and 35 temporary. In the country centres and homes, there are 77 sisters, 38 of whom are on the permanent staff and 39 temporary. During the year, eleven members were appointed to the permanent staff, 4 permanent members resigned, 1 is on indefinite sick leave and another is on extended leave.

The efficiency and success of this service depends a great deal on the zeal of the nursing staff and grateful acknowledgement is made of the devotion to duty manifested by all the staff.

Accidents in Children.

Approximately 6,000 child accident cases are treated in Queensland hospitals each year and accidental deaths in the 1 and under 15 years age group in 1957 was 89.

In an all out drive to check accidents in children, the Honourable the Minister, launched a Home Safety Campaign prepared by the Queensland Health Education Council in collaboration with this service.

As statistics have shown that accident hazards differ in three well defined age groups, namely, babies, toddlers and older children, pamphlets relevant to each age group have been prepared and are distributed to all mothers attending Maternal and Child Welfare Centres. Each pamphlet deals with the hazards relevant to the age group and methods of prevention are dealt with.

As well as the Maternal and Child Welfare Service, co-operation has been sought and readily received from the British Medical Association, Creche and Kindergarten Association and the Department of Education.

A 35-millimetre film short on the subject of home safety is being produced and will be screened throughout Queensland.

Survey of Deaths of Premature Infants in 1957.

This project was carried out with the co-operation of the medical profession.

Questionnaires were forwarded to doctors asking for particulars concerning the mothers and babies. Out of a total of 262 premature babies who died during the year, adequate information was forwarded concerning 179. Details of this survey are shown in Appendix A.

From this survey a number of salient facts can be gleaned and possible treatment suggested—

(1) Essential hypertension is frequently associated with small babies and a high protein diet should be given to mothers with high blood pressure in the hope of obtaining a baby weighing more than 5 lb. 8 oz.

(2) The main objective of the treatment of toxaemia should be to carry the mother over the critical period of 28 weeks to 36 weeks. Early treatment and hospitalisation as suggested by Mayes should be routine practice.

(3) If multiple pregnancy has been diagnosed the mother should be made to realise the importance of rest and antenatal attendances should be more frequent than usual to detect early toxaemia and treat it accordingly.

(4) If a caesarian section is performed for haemorrhage from a placenta praevia and the baby is under 5 lb. 8 oz. its chances of survival do not appear good. This is probably due to the long period of anoxia between the onset of bleeding and operation.

(5) The high rate of habitual premature labour suggests that this should be the field where most foetal salvage is possible. The giving of ethisterone up to 30 milligrams three times daily as suggested by Alder and Kreiger (Medical Journal of Australia 27th July, 1957) is worthy of trial, particularly if there is a history of repeated miscarriages between eight and sixteen weeks.

In those cases in which the baby is lost at a slightly later period, that is between twenty to twenty-eight weeks, cervical incompetence should be considered. A lacerated external os does not necessarily mean incompetence, but laceration of the internal os may be present with an apparently intact external os. If the internal os is incompetent cervical suture is suggested (McDonald, Journal of Obstetrics and Gynaecology of the British Empire, June, 1957).

(6) In post mortems performed hyaline membrane is mentioned in 7 cases. It is possible that this condition was responsible for the deaths of some of the babies on whom post mortems were not done. Little as yet, is known of the condition although it is known to cause death within 48 hours, particularly in babies under 5 lb. 8 oz. The pathology is an eosinophilic infiltration under the alveolar membrane and much work is at present being done on the aetiology and treatment (Archives of Pathology, Vol. 59, 1955; Bulletin of the John Hopkins Hospital, Vol. 96, 1955.)

(7) Breech deliveries are frequently found in these small babies and version should be attempted before delivery if possible. If a vertex presentation is achieved delay of the head on the perineum is to be avoided and free use of episiotomy should be made to avoid possible intracranial haemorrhage.

(8) Placental abnormalities noted include circumvallate placenta. This may cause haemorrhage and premature labour may ensure. This condition may be found more frequently than in this survey if it is looked for, but it does not represent a preventible cause of prematurity. (Journal of Obstetrics and Gynaecology of the British Empire, Vol. 63, 1956; American Journal of Obstetrics and Gynaecology, Vol. 69, 1955).

(9) It should be the aim of all doctors to obtain post mortem reports on all deaths of newly born infants. It is only by adequate investigations as to the cause of death that knowledge of pathological conditions can increase and the standard of treatment be improved.

(10) The standard of nursing must be maintained at a high level for only good nursing can ensure the survival of many premature infants.

VITAL STATISTICS.

BIRTHS.

During the year 1957, 33,763 births were registered, an increase of 1,354 over the previous year. There were 17,329 males aand 16,434 females born, giving a masculinity rate of 105·4. The natural increase of 22,084 was equal to 1·60 per cent. of the population, compared with 1·50 in 1956. The birth rate for 1957 was 24·2 per 1,000 mean population, compared with 23·7 in 1956.

MARRIAGES.

Registration of marriages in 1957 numbered 10,271, giving a marriage rate of 7·4 per 1,000 mean population, compared with 7·3 in the previous year. Minors married numbered 4,885 comprising 983 males and 3,902 females.

DEATHS.

Maternal.

The maternal mortality rate was 0·62 per 1,000 live births compared with 0·89 in 1956, and equalling the rate for 1955 which was the lowest ever experienced in Queensland. There were 21 deaths during the year caused by diseases and accidents of pregnancy and childbirth. Of these, 10 were due to complications of childbirth and 6 were due to diseases and accidents of pregnancy (excluding five abortions). The causes of the 10 deaths due to disease and accidents of childbirth were as follows:—

Puerperal Pulmonary Embolism	3
Sepsis of Childbirth and the Puerperium ..	2
Prolonged Labour	2
Cerebral Haemorrhage in the Puerperium	1
Post-partum Haemorrhage	1
Other complications of childbirth	1

The causes of the 6 deaths due to diseases and accidents of pregnancy were as follows:—

Toxaemias of pregnancy	5
Haemorrhage of pregnancy	1

Infantile Mortality.

Deaths of infants aged under one year numbered 732, comprising 418 males and 314 females, compared with 737 in 1956. The infantile mortality rate was 21·7 deaths per 1,000 live births compared with 22·7 in 1956. In the metropolitan area the rate decreased from 19·9 in 1956 to 18·9. The sub-tropical (non-metropolitan) area rate decreased from 23·3 in 1956 to 22·8 in 1957, while in the tropical area the rate decreased from 25·8 to 23·8 per 1,000 live births.

The total number of deaths due to prematurity (unqualified) was 164 compared with 189 in 1956. Deaths from prematurity since 1950 were as follows:—

1950	155
1951	153
1952	187
1953	145
1954	185
1955	141
1956	189
1957	164

The decrease of 25 deaths in the present year was due principally to improvements in the figure for the tropical area of the State where there were 16 fewer deaths recorded than in the previous year.

Deaths of Children aged one year and under five years.

(*a*) Deaths of children aged one year and under two years during the year 1957, numbered 64, representing a death rate of approximately 2·0 per 1,000 children in that age group. There were 79 deaths in 1956.

The chief causes of death were:—

Accidents		18
Pneumonia—		
Bronchopneumonia	12	
Lobar Pneumonia	3	
Other Unspecified	2	
		17
Congenital Malformations		4
Gastroenteritis and Colitis		4

Of the 18 deaths (15 males, 3 females) due to accidents, three were caused by burns and scalds, four by drowning, four by accidental poisoning, two by traffic accidents, two by motor-vehicle (non-traffic) accidents, one by falling and one by ingestion or inhalation of a foreign body. Of the four deaths due to accidental poisoning, two were caused by petroleum products, and two by drugs.

(*b*) Deaths of children aged two and under five years during the year numbered 83, representing a death rate of approximately 0·9 per 1,000 children in that age group. Deaths in 1956 were 101.

The chief causes of death were:—

Accidents	22
Congenital Malformations	5
Pneumonia (all kinds)	6
Malignant Neoplasms	15
Gastroenteritis and Colitis	3
Meningitis	3
Nephritis and Nephrosis	3

Of the 22 deaths due to accidents, five were caused by motor traffic accidents, six by drowning, three by burns and scalds, and two by motor-vehicle (non-traffic) accidents.

Accidental deaths of children aged one and under fifteen years.

Accidental deaths of children in this age group numbered 89 in 1957, compared with 95 in 1956, and an average of 88 in the eight years 1950 to 1957 inclusive. The total deaths of children in this age group from all causes were 266, of which 33 per cent. were caused by accident.

ST. PAUL'S TERRACE HOME.

Total admissions to the home for the year ending 30th June, 1958, were babies 223 and mothers 92 and the daily average was babies 13·8, mothers 4.4.

Babies admitted included difficult feeding cases, both breast and artificially fed, twins (10 sets) and 1 set of triplets, babies with hare lip and cleft palate for pre-operative feeding management, babies with congenital heart conditions, mongolism, pyloric stenosis and one hydrocephalic who had a shunt operation. This last baby did reasonably well at the home, but shortly after discharge was re-admitted to hospital where it died not long after admission.

Babies have been admitted from Ipswich, Beerburrum, Wallangarra, Woodridge, Boonah, Cleveland, Waterford, Gordonvale, Thornlands, Winton, Christmas Creek, Surfers Paradise, Beenleigh, Wandoan, Dayboro, Nambour, Dirranbandi, Bundaberg, Clermont, and Hungerford.

ST. PAUL'S TERRACE HOME TRAINING SCHOOL.

In July, 34 girls received certificates at the graduation ceremony at Centaur House. These were presented by Dr. Johnson. In January, 33 graduates received certificates at the graduation ceremony and again these were presented by Dr. Johnson. Of the present grade, 35 students were presented for examination in June.

CLAYFIELD HOME.

Two hundred and fourteen babies and 83 mothers were admitted during the year, with a daily average of 14·06 babies and 3·74 mothers.

The usual difficulties were met with, such as:—small lethargic babies, overstimulation and feeding and behaviour problems in older babies. Other difficulties were sudden weaning, pyloric spasm, plyoric stenosis, difficult twins (10 sets) congenital heart conditions and malnutrition.

Babies were admitted from the following places: Coolangatta, Wandoan, Mount Isa, Ravenshoe, Kingaroy, Murwillumbah, Longreach, Bundaberg, Darwin, Aramac, Charters Towers, Yalleroi, Prairie, Gympie, Esk, Mackay, Monto, Roma, Nanango, St. George, Beenleigh, Brisbane, and one mother from Sydney who had a premature birth whilst on holidays in Brisbane.

CLAYFIELD HOME TRAINING SCHOOL.

There have been five withdrawals among girls commencing to train during the past year, otherwise they have, on the whole, proved satisfactory. All of the 10 girls who were presented for examination in November, gained a pass, but one girl failed to satisfy the examiners in the next group.

As in the previous year, Clayfield Home combined with the Ipswich Home for the graduation ceremony at Centaur House. The Honourable the Minister, Dr. H. W. Noble, presented the certificates in December and Mr. H. B. Taylor, M.L.A. presented them in May.

IPSWICH HOME TRAINING SCHOOL.

Seven trainees were prepared for examination, all received certificates which were presented at combined graduation ceremonies (Clayfield and Ipswich) at Centaur House, by the Minister for Health and Home Affairs in December and by Mr. Taylor, M.L.A., in May.

IPSWICH HOME.

During the year 141 babies and 99 mothers were admitted in to residence (total admissions 240). The daily average being babies 7·9 and mothers 3·8, an increase of 19 babies and 22 mothers since the previous year.

Among the babies given assistance (referred from the Maternal and Child Welfare Centres, Maternity Ward, General Hospital, and private doctors) were 49 premature and frail babies, 17 between 4 and 5 lb. on admission and 22 between 5 and 6 lb. on admission.

Difficulties with full term breast fed babies were caused by inadequate lactation in mothers, mothers having small cracked and depressed nipples, mothers with mastitis, babies fighting the breast, lethargic and jaundiced babies, re-establishment of natural feeding after breast abscess, mothers lacking in confidence in management, and vomiting babies. Three sets of twins and 2 sets of triplets have been given help. The artificially fed babies included: undernourished babies, different types of vomiting babies—including pylorospasm, fat intolerance, cleft palate, sudden weaning, educational feeding, anaemia, mongolism, feeding and behaviour problems.

Babies were admitted from Ipswich and suburbs, Rosewood, Lowood, Laidley, Boonah, Aratula, Kalbar, Brisbane, Inala, Wacol, Peak Crossing, Amberley, Rosevale, Haigslea, Dundas, and Townson.

TOOWOOMBA HOME.

During the year 54 mothers and 134 babies have been admitted to "Unara," the daily average being mothers 1·73 and babies 12·39.

The number of artificially fed babies again exceeds that of the breast fed babies.

In addition to mothers and babies from Toowoomba and surrounding districts, mothers and babies were also admitted from over a wide area including Goondiwindi, Wandoan, Talwood, Toobeah, Maroochydore, Bundaberg, Dalby, Miles, and Texas.

Reasons for admission to the home were many; by far the greater number being management and behaviour problems. Other conditions included prematurity and frailty, mongolism, various types of vomiting, congenital heart condition, malnutrition, infantile eczema, congenital malformation, sudden weaning for various reasons, twins, and establishment and restoration of breast feeding.

In December a group of students from the Glennie Memorial School visited "Unara" and the functions of the home were explained and demonstrated to them.

TOOWOOMBA HOME TRAINING SCHOOL.

During the year 12 students completed their training and successfully passed the final examination for child welfare assistants.

Graduation ceremonies were held in December, 1957, and May, 1958; the certificates being presented by the Minister for Transport.

ROCKHAMPTON HOME.

During the year 83 babies and 37 mothers were admitted to the home. The total number of babies is less than last year as there were two slack periods of 2–3 weeks each, corresponding with slack periods in the hospitals. The daily average was, babies 7·84, mothers 2·17.

Total number of premature babies was 29:—1 weighing 2 lb. 8 oz.; 1 2 lb. 13½ oz.; 3 under 4 lb.; 11 under 5 lb.; 11 under 6 lb., and 2 just over 6 lb.

Cases admitted included 4 sets of twins, 3 mongols, 3 mentally deficient babies, 3 backward children, 2 babies with congenital heart conditions, a case of cystinuria, 1 hydrocephalic, 1 microcephalic, an early Pink Disease. Other cases included pyloric stenosis and pylorospasm, malnutrition, vomiting, weaning and feeding difficulties.

It has been necessary to gavage feed many of the premature infants and some of the mentally deficients.

Babies were admitted locally and from surrounding districts, Yeppoon, Baralaba, Westwood, Duaringa, Gladstone, Thangool, Mount Larcom, Mount Morgan, Raglan, Theodore, Marmour, Mackay, Marlborough, Isisford, Alpha, Blackall.

Many more doctors are now making use of the home.

ROCKHAMPTON HOME TRAINING SCHOOL.

Eight trainees successfully completed their training during the year and in place of a graduation ceremony, the matron arranges an evening party for the successful trainees.

SANDGATE HOME.

The year commenced with 40 children in residence. Admissions during the year were 807. The admissions were made up as follows:—

Boys 1½ years to 5 years	226
Boys 5 years to 10 years	216
Boys over 10 years	28
Total boys	470
Girls 1½ years to 5 years	156
Girls 5 years to 10 years	149
Girls over 10 years	32
Total girls	337

The total number of days children spent in home was 17,751, average duration of residence, each child 21·9, yearly daily average 48·63 and the total number of families admitted was 329. Of these families, 16 returned once and 2 returned twice and 1 family returned three times.

There have been 12 children sent to hospital, of these, 6 returned to the home, the remainder were discharged to their own homes from hospital.

A further outbreak of chicken pox in the home last October continued until admissions were restricted, in April, to children who had previously had this disease: a feature of the outbreak this year was the large number of young children who were sick and ran high temperatures for several days, and thus required much nursing care.

It is pleasing to report that the number of admissions increased by 157 (to 807) and the average time of residence for each child was reduced to 21·9 days, a considerable decrease over previous years, thus allowing more families to benefit from the home.

Staff and children both enjoyed the Christmas festivities and the annual R.A.C.Q. picnic, to which they were invited.

The usual religious facilities have been provided, and the older children have been attending school.

Very little trouble is experienced with the children after admission and they very soon settle into the routine of the home. Some time is spent on the beach each day (weather permitting) and the nurses very soon become adept at keeping the children occupied and entertained in the recreation room or playground.

Sandgate Home—Baby Ward.

The year commenced with 10 babies in residence. Admissions during the year were 200, total number of days spent in the home 4,469, yearly daily average, 12·3 and the average number of days in residence for each child was 22·3.

The workings of the Baby Home has gone on very well during the year. The majority of the babies and toddlers have progressed well.

It has been necessary to send 11 children to hospital. Most of these were suffering from a bowel infection during the months of September and October. This infection caused considerable worry, and necessitated the closing of the home to admissions for a short period.

The increased number of admissions to the home has kept the staff very busy throughout the year.

Director's Consultant Centre.

Attendances during the year ended June, 1958, were as follows:—

Number of children examined for admission to Sandgate Home . .	1,368
Number advised per phone	599
Attendances at Director's Consultant Centre for advice	2,302
Total number of children examined or advised at centre	4,269

This shows a slight decrease in the number of infants and toddlers whose feeding, management, or behaviour has proved difficult and who were referred to the director by sisters in charge of metropolitan and country centres, and by medical practitioners.

There has been a slight decrease in the number of children medically examined for admission to the Sandgate Home.

Many families were unable to have their children admitted to Sandgate Home during the mother's hospitilisation owing to the shortage of beds. These families were referred to the Red Cross Home.

A number of children living out of the metropolitan area were medically examined by their own doctors.

Two hundred and eighty blood counts (184 babies, 96 toddlers), 59 urine specimens, 7 cellophane swabs, 11 specimens of faeces for fat analysis, 82 rectal swabs (63 children) were examined at the Laboratory of Microbiology and Pathology.

Sixty-six children and babies were referred to hospital, 23 to their own doctor, 6 to the Radium Clinic, 6 to the X-ray Department, 5 to the Child Guidance Centre.

Of the 184 babies and 96 toddlers who had blood counts done, 12 babies and 6 toddlers had haemoglobin levels below 10 gm. per 100 mls. Of the rectal swabs examined 3 gave positive swabs for salmonella, 10 positive swabs for coliform bacilli.

Pre-School Health Centres.

At the sixteen centres and several kindergartens, children from the age of one to six years were examined twice during the year at most centres. Appointments at Woolloongabba, Valley, and Herschell Street Clinics, are at eight monthly intervals; at Ipswich appointments are at nine monthly intervals.

The total number of examinations made during the year was 5,307 of which 2,239 were first examinations and 3,068 were subsequent examinations. The total examinations during the previous year numbered 5,073.

Despite an epidemic of chicken pox and rubella in October, November and December, overall attendance has been satisfactory. During the year the daily average per clinic was 18·3. However attendance at West End Centre was disappointing, and at Inala Centre, the attendance for first examinations was very good, but the subsequent visits are below the number hoped for. Clinics were closed between 13th December, 1957, and 13th January, 1958.

Three hundred and ninety-six blood counts, 37 specimens of urine, 3 rectal swabs, 2 specimens of faeces for fat analysis were examined at the Laboratory of Microbiology and Pathology.

Forty-one children were referred to hospital for treatment, 32 to their own doctor, 5 to the X-ray Department, 3 to the Radium Clinic, 6 to the Speech Therapy Clinic, 12 to the Child Guidance Clinics, 8 to their own dentists and 9 to the Acoustic Laboratory.

Of the 396 toddlers who had blood counts done, 18 had haemoglobin levels below 10 gms. per 100 mls.

Country Centres.

The total number of examinations of toddlers at country centres is as follows:—

Centres.	New Patients.	Subsequent Visits.	Total Visits.	Number of Clinics.	Average per Clinic.
Cairns	230	199	429	35	12·25
Rockhampton	146	69	215	24	8·92
Toowoomba	42	71	113	19	5·9
Townsville	194	121	315	23	13·6

Total attendances at the metropolitan and country centres were 6,379.

Eighteen children were referred to their own doctor for treatment, 10 to hospital and 1 to their own dentist.

Kindergartens Controlled by the Creche and Kindergarten Association.

Children attending Valley, Paddington, West End, and Rosalie were medically examined twice during the year at the kindergarten.

Kindergartens affiliated with the Creche and Kindergarten Association.

Children attending Wynnum and Holland Park were examined at the kindergarten twice during the year. Children from Ashgrove Kindergarten, Devoy Street, were medically examined at the Ashgrove Toddlers' Clinic.

Kindergartens directed by Department of Public Instruction.

Children attending West Ashgrove Kindergarten were medically examined twice during the year. Children from Ipswich Kindergarten attend Toddlers' Clinic, Ipswich, for half-yearly medical examinations.

Ante-Natal Section.

A total number of 575 mothers attended the three ante-natal clinics during the year.

The attendances at the three centres were:—

Woolloongabba	2,450
Fortitude Valley	1,258
Caboolture	314

Owing to the increased attendances at the Woolloongabba Centre, it was found necessary to conduct two extra clinics each month.

Attendances at both the ante-natal lectures and physiotherapy classes at the Fortitude Valley and Woolloongabba Centres have been good, the attendances for the year being 533.

Salk Vaccine is given to expectant mothers at both Fortitude Valley and Woolloongabba Centres.

Approximately 50 per cent. of mothers return for post-natal examination.

Correspondence Section.

There is an increase in the number of birth notifications received.

As more mothers are able to attend centres opened during the year, there is a noticeable decrease in responses to circulars.

Slightly fewer letters were received from mothers for advice concerning feeding and management, as many correspondence mothers are now attending centres.

The majority of New Guinea mothers are now able to receive advice from sisters attached to their own Department of Health centres.

Some Mission Stations and Islands are assisted by the Correspondence Service.

Mothers in isolated areas often consult the nurse by long distance telephone.

Social Welfare Section.

The South Brisbane Hospital visiting commenced on 26th March, 1958, after a ward was opened for patients who were transferred from the Brisbane Women's Hospital after confinement.

This year there has been an increase in the Social Service and home visits:—

Social Service visits 1956-1957	3,444
Social Service visits 1957-1958	4,000
Number of newborns visited at home 1956-1957	855
Number of newborns visited at home 1957-1958	1,045
Number of newborns visited in Brisbane Women's Hospital	10,293
Number of newborns visited in South Brisbane Hospital	242
Colmslie attendances	73
Number of test feeds given	102

Lecture Demonstration to School Girls.

The mothercraft teaching in the schools for the year 1957-1958 was satisfactory. The number of girls taking the mothercraft lessons have increased in most of the schools making it necessary to have more classes, thus a longer time is spent in each school.

The new Camp Hill school had lessons in the last period of the school year. Though the numbers were small they were very enthusiastic; all the girls obtaining certificates.

The headteachers have been most co-operative in arranging suitable times for the lessons, making it simpler to plan the school timetables.

It is hoped to be able to make satisfactory arrangements after the August vacation to have the lessons given at the new High Schools—Balmoral and Redcliffe.

The examination results on the whole were satisfactory, 88·9 per cent. of girls gaining certificates. One thousand and ninety-seven (1,097) examination papers and mothercraft books were examined in the metropolitan area and sixty-one (61) from the country centres.

Newspaper Articles.

As in previous years, articles of topical interest in infant and pre-school management were forwarded each month to 60 newspapers throughout the State. Subjects dealt with included: "The Disturbed Child", "Bed Wetting", "Thumb Sucking", "What is A Good Appetite?", "Preparing for The Christmas Holidays", "Make Sure Your Children are Safe in the Water". "Save Your Baby with Safe Habits". "Save Your Toddler with Safe Habits", "Save Your Child with Safe Habits", "Anaemia in Childhood", "Buying Shoes for your Toddler".

Medical Students.

Final year medical students attend two clinics conducted by the Director instead of four as in the previous year. As students now attend the South Brisbane Hospital, it was found impossible to include more than two visits in the curriculum.

Publications.

The demand for the booklets "Care of Mother and Child", "Problems of Prematurity", "The Expectant Mother", and "Ante-Natal and Post-Natal Exercises" continues. Requests being received from all over the State as well as from Cocos Island and Darwin.

Baby Clinic Social Club.

Meetings held during the year were well attended and interest maintained. A Christmas party, which was held at Centaur House, in November, was very well attended and enjoyed.

Several newsletters have been sent to country members.

Christmas parcels and contributions are still being sent to Helga Koller—our sponsored child through "Save the Children" Fund.

TABLE LI.

VISITS TO NEWBORNS, SUBSEQUENT AND TOTAL VISITS.

Year.	Visits to Newborns.	Subsequent and other Visits.	Total Visits.
1955–56	26,513	1,451	27,964
1956–57	27,111	1,442	28,553
1957–58	27,682	1,536	29,218

TABLE LII.

ATTENDANCES AT CENTRES.

Number of Cases seen at the Centres.

	1955–56.	1956–57.	1957–58.
Infants—			
Under one year ..	19,368	19,858	20,991
One to two years	5,152	5,531	5,722
Over two years ..	1,976	2,335	2,555
Total	26,496	27,724	29,268
Expectant mothers..	951	1,069	1,121
Total new cases	27,447	28,793	30,389

TABLE LIII.

ATTENDANCES OF INFANTS AND CHILDREN AT MATERNAL AND CHILD WELFARE CENTRES AND SUB-CENTRES.

Metropolitan.

—	1955–56.	1956–57.	1957–58.
Fortitude Valley ..	16,504	15,933	17,697
Branches—			
Clayfield	1,198	891	1,198
Hamilton ..	1,317	1,728	1,455
Hendra	1,280	1,522	1,282
Newmarket-Grange	937	956	619
Wacol Immigration Centre	853	535	801
West Stafford	275	1,178	2,040
Windsor	3,077	2,477	2,617
	25,441	25,220	27,709
Herschell Street ..	15,962	17,045	17,854
Branches—			
Chelmer (opened 10–9–56) ..	..	628	1,017
Corinda	2,049	2,531	2,422
Darra	821	1,150	1,715
Enoggera ..	2,405	2,942	2,970
Graceville.. ..	1,969	1,899	2,406
Inala	1,486	2,294	4,248
Indooroopilly ..	1,241	1,427	1,696
Mitchelton ..	3,212	3,000	3,076
Oxley	872	1,325	1,593
St. Lucia	812	694	855
Toowong	1,883	1,859	2,243
	32,712	36,794	42,095
Nundah	5,424	4,532	4,986
Branches—			
Banyo	564	580	760
Chermside ..	2,694	2,631	3,596
Geebung	1,298	1,215	1,092
Kedron	1,669	1,666	1,830
Northgate ..	218	416	325
Wavell Heights	440	397	219
Zillmere	2,195	2,134	2,521
	14,502	13,571	15,329

Metropolitan—continued.

—	1955–56.	1956–57.	1957–58.
Paddington	3,005	3,299	3,745
Branches—			
Ashgrove	3,222	3,734	4,169
Bardon	1,195	998	963
Kelvin Grove ..	1,065	865	697
Rosalie	1,325	1,166	1,330
	9,812	10,062	10,904
Sandgate	6,347	5,971	5,481
Branches—			
Bald Hills ..	57	204	272
Caboolture ..	1,292	1,310	1,317
Clontarf (opened 1–4–58) ..	..	..	165
Cribb Island ..	307	302	370
Dayboro	343	326	370
Redcliffe	2,794	2,538	2,525
	11,140	10,651	10,500
South Brisbane Sub-centres—			
Archerfield ..	497	715	859
Bulimba	2,199	2,355	2,377
Camp Hill ..	2,089	1,993	1,476
Holland Park ..	2,347	2,545	2,342
Morningside ..	1,878	2,480	2,719
Norman Park (opened 13–2–58)	..	..	216
Stones Corner ..	997	924	32
	10,007	11,012	10,921
West End	6,811	6,760	6,936
Branch—			
Beenleigh ..	1,022	862	1,090
	7,833	7,622	8,026
Woolloongabba ..	18,852	19,303	18,518
Branches—			
Belmont opened 13–11–56 ..	..	685	1,576
Coopers Plains ..	1,846	2,197	1,983
Ekibin	2,107	2,215	2,189
Ipswich Road ..	1,588	1,992	1,766
Rocklea (closed 9–9–57)	1,474	727	88
Moorooka (opened 9–9–57) ..	..	..	1,649
Salisbury	1,475	1,977	1,474
Upper Mount Gravatt ..	1,276	1,653	1,719
Yeronga	1,669	1,636	1,527
	30,287	32,385	32,489
Wynnum	7,709	7,665	8,694
Branches—			
Cleveland ..	681	832	787
Manly	954	1,189	1,623
	9,344	9,686	11,104

Country.

—	1955–56.	1956–57.	1957–58.
Atherton	1,648	1,568	2,042
Branches—			
Herberton ..	128	284	136
Malanda	575	564	521
Millaa Millaa ..	670	422	330
Koombooloomba (opened 2–8–57)	..	..	125
Ravenshoe ..	644	485	746
Tinaroo Falls	189	259	263
Yungaburra ..	147	67	132
	4,001	3,649	4,295

Country—continued.

—	1955–56.	1956–57.	1957–58.
Ayr	3,782	3,986	4,148
Branches—			
Clare	335	296	380
Giru	837	722	819
Home Hill	1,924	2,495	2,532
	6,878	7,499	7,879
Barcaldine	1,339	1,602	1,783
Branches—			
Alpha	267	321	516
Aramac	202	308	243
Jericho	144	127	106
	1,952	2,358	2,648
Biloela	5,138	5,739	5,400
Branches—			
Baralaba	371	717	563
Goovigen	220	335	281
Jambin	83	102	95
Moura	220	315	303
Thangool	273	296	344
Theodore	465	583	579
Wowan	536	751	683
	7,306	8,838	8,248
Bowen	2,534	2,297	2,077
Branches—			
Collinsville	1,250	1,591	1,645
Proserpine	1,459	1,760	1,297
Queen's Beach	517	401	392
	5,760	6,049	5,411
Bundaberg	9,481	9,130	10,092
Branches—			
Gin Gin	119	269	263
Miriam Vale	180	324	354
	9,780	9,723	10,709
Cairns	10,230	11,229	12,456
Branches—			
Cooktown	159	138	180
Earlville	430	373	949
Edge Hill	655	707	845
Edmonton	302	378	601
Gordonvale	994	1,206	1,515
Kuranda	160	185	254
Mossman	1,544	1,622	2,036
	14,474	15,838	18,836
Charleville	3,752	3,345	3,070
Branches—			
Cunnamulla	1,093	1,507	1,636
Morven	148	115	108
Quilpie	278	418	422
	5,271	5,385	5,236
Charters Towers	3,002	3,307	3,545
Dalby	3,351	3,323	3,371
Branches—			
Chinchilla	1,176	1,193	1,304
Miles	670	526	683
	5,197	5,042	5,358
Emerald	1,611	1,608	1,622
Branches—			
Blair Athol	131	233	131
Capella	117	140	142
Clermont	543	414	529
Springsure	253	301	258
	2,655	2,696	2,682

Country—continued.

—	1955–56.	1956–57.	1957–58.
Gayndah	1,862	1,821	1,370
Branches—			
Eidsvold	271	312	336
Monto	1,609	1,791	1,329
Mulgeldie	118	216	104
Mundubbera	841	896	1,036
	4,701	5,036	4,175
Gladstone	4,118	5,062	4,752
Branches—			
Calliope	101	252	188
Mount Larcom	330	331	352
	4,549	5,645	5,292
Goondiwindi	1,161	1,831	2,703
Branches—			
Dirranbandi	260	502	439
Inglewood	335	456	532
St. George (opened 5–2–57)	..	171	648
Texas	271	474	608
Yelarbon	145	233	397
	2,172	3,667	5,327
Gympie	5,475	5,386	5,988
Branches—			
Cooran	232	393	312
Cooroy	80	374	532
Imbil	471	576	469
Kandanga	117	187	361
Pomona	211	383	347
Tewantin	79	349	351
	6,665	7,648	8,360
Ingham	3,401	3,258	3,347
Branches—			
Cardwell	338	489	309
Halifax	567	844	1,139
	4,306	4,591	4,795
Innisfail	6,174	4,944	5,964
Branches—			
Babinda	998	943	1,114
El Arish	111	214	171
Mourilyan	280	341	222
Silkwood	184	235	177
South Johnstone	249	276	220
Tully	1,575	1,991	2,048
	9,571	8,944	9,916
Ipswich	11,658	12,578	12,920
Branches—			
Boonah	1,601	1,613	1,687
Esk	536	629	719
Kalbar (opened 11–1–57)	..	184	339
Laidley	758	676	656
Lowood	376	505	592
Rosewood	793	762	952
Toogoolawah	576	719	688
	16,298	17,666	18,553
Kingaroy	3,187	3,058	2,870
Branches—			
Kumbia	251	264	214
Nanango	464	682	790
Yarraman	143	190	146
	4,045	4,194	4,020

Country—continued.

—	1955–56.	1956–57.	1957–58.
Longreach	1,518	1,520	1,730
Branches—			
Blackall	999	827	1,184
Ilfracombe (opened 24–1–57)	..	19	31
Muttaburra	9	16	57
	2,526	2,382	3,002
Mackay	7,726	7,758	7,720
Branches—			
Calen	278	263	332
Finch Hatton	388	286	239
Koumala	231	258	152
Marian	406	369	351
North Mackay	2,253	2,295	1,968
Ogmore (transferred from Rockhampton 26–2–58)	..	..	63
Sarina	1,916	1,806	1,733
St. Lawrence (transferred from Rockhampton 12–2–58)	..	..	26
West Mackay	2,011	2,044	1,913
	15,209	15,079	14,497
Mareeba	3,369	2,972	3,769
Branches—			
Dimbulah	261	347	402
Mount Mulligan (closed 6–12–57)	182	99	38
Mutchilba (opened 28–3–58)	..	..	35
	3,812	3,418	4,244
Maryborough	6,453	6,871	7,461
Branches—			
Biggenden	662	666	779
Childers	516	780	844
Howard	448	349	472
Pialba	449	531	481
	8,528	9,197	10,037
Mount Isa	3,861	3,938	4,821
Branches—			
Camooweal	63	30	69
Cloncurry	990	903	765
	4,914	4,871	5,655
Murgon	1,417	1,259	1,300
Branches—			
Goomeri	660	750	528
Hivesville	82	41	60
Kilkivan	95	175	194
Proston	199	231	227
Wondai	682	494	740
	3,135	2,950	3,049
Nambour	3,884	4,925	4,533
Branches—			
Buderim	118	151	194
Caloundra	423	387	408
Cooroy (to 7–3–56)	451	..	..
Eumundi	145	145	152
Landsborough	164	264	286
Maroochydore	408	528	424
Palmwoods	264	188	163
Yandina	233	213	267
	6,090	6,801	6,427
Railway Car—			
Hughenden	946	1,132	1,706
Julia Creek	562	737	752
Maxwelton	241	172	272
Richmond	414	438	672
Winton	773	617	740
	2,936	3,096	4,142
Rockhampton	11,449	12,058	11,642
Branches—			
Mt. Morgan	443	1,761	1,716
North Rockhampton	1,544	1,220	1,523
Ogmore (to 2-26-58)	198	180	95
Park Avenue	818	725	718
St. Lawrence (to 12–2–58)	130	161	41
Yeppoon	1,034	744	902
	15,616	16,849	16,637
Roma	2,819	2,775	2,987
Branches—			
Dulacca	176	107	174
Jackson	200	67	95
Mitchell	1,271	1,487	1,512
Surat	311	428	212
Wallumbilla	133	185	249
Yuleba	232	249	240
	5,142	5,298	5,469
Southport	3,740	4,668	5,129
Branches—			
Beaudesert	1,506	1,645	1,686
Burleigh Heads	950	1,063	1,343
Coolangatta	3,131	3,018	2,933
	9,327	10,394	11,091
Toowoomba	7,903	7,262	6,630
Branches—			
Crow's Nest	627	648	653
Forest Hill	57	33	90
Gatton	1,005	1,036	1,010
Harristown	610	549	499
Millmerran	632	677	635
Oakey	826	672	817
Pittsworth	999	1,022	1,097
	12,659	11,899	11,431
Townsville	11,988	12,144	12,360
Branches—			
Garbutt	520	652	727
Gulliver	368	1,985	1,810
Rising Sun	1,991	2,178	2,633
	14,867	16,959	17,530
Warwick	4,739	4,468	4,152
Branches—			
Allora	579	614	607
Clifton	280	213	339
Killarney	586	478	511
Stanthorpe	2,388	2,505	3,033
	8,572	8,278	8,642
Social Welfare Services	4,358	3,444	4,073

TOTAL ATTENDANCES OF INFANTS AND CHILDREN AND EXPECTANT MOTHERS.

1955–56.	1956–57.	1957–58.
401,828	418,105	443,696

TABLE LIV.

Attendances at Ante-Natal Clinics.

—	1955–56.		1956–57.		1957–58.	
	New Cases.	Attendances.	New Cases.	Attendances.	New Cases.	Attendances.
Fortitude Valley	91	991	109	1,035	131	1,258
Woolloongabba	188	1,587	187	1,844	278	2,420
Caboolture	28	248	38	288	37	314
Totals	307	2,826	334	3,167	446	3,992

APPENDIX A.

SURVEY OF 179 DEATHS DUE TO PREMATURITY IN 1957.

Parity.

1. Primipara	29	18%
2. Multipara	118	74%
3. Not stated	13	8%
	160	

Age.

1. Below 20 years	10	6.2%
2. Between 20 and 30	80	50%
3. Between 30 and 40	44	27.5%
4. Over 40	7	4.3%
5. Not stated	19	12%
	160	

Blood Pressure.

(*a*) Normal at onset—		
1. Remained normal throughout pregnancy	65	40%
2. Subsequent rise without toxaemia symptoms	31	20%
3. Subsequent rise with toxaemia symptoms	11	7%
4. Rheumatic heart disease with slight rise with overlying congestive cardiac failure	1	
(*b*) Elevated at onset—		
1. Remained stationary throughout	7	4.4%
2. Subsequent rise without toxaemia symptoms	5	3%
3. Hypertension treated with Serpasil	1	
4. Subsequent rise with toxaemia symptoms	15	9.4%
5. Subsequent hypertension causing ante partum haemorrhage	1	
(*c*) Not recorded	23	14%
	160	

Induction of Labour.

No	139	87%
Yes—		
21—Medical or surgical induction	10	6.4%
Caesarian Section	11	6.6%
	160	

Indications for Caesarian Section.

1. Ante partum haemorrhage due to Placenta Praevia in multipara 4.
2. Ante partum haemorrhage due to Placenta Praevia in a Primipara.
3. Ante partum haemorrhage due to Placenta Praevia in a multipara 3.
4. Gross pre-eclamptic toxaemia at 30 weeks in a primipara after failed tubal induction and artificial rupture of membranes.
5. Severe pre-eclamptic toxaemia superimposed on hypertension at 30 weeks in a multipara 2 not suitable for other methods of induction.
6. Severe pre-eclamptic toxaemia at 28 weeks in a primipara.
7. Ante partum haemorrhage from central Placenta Praevia in a multipara 2.
8. Severe pre-eclamptic toxaemia at 30 weeks following failed tubal induction.
9. Severe pre-eclamptic toxaemia at 34 weeks in a nineteen year old primipara.
10. Ante partum haemorrhage from central Placenta Praevia in a multipara 2 associated with twin pregnancy.
11. Pre-eclamptic toxaemia in a multipara 4 aged 42.

Indications for Inductions.

1. Rh incompatability in a multipara 4 with rising antibody titre. Final titre 1 in 512 albumen antibodies. First child was normal, second had a transfusion at 10 days and lived 5 weeks, the third had an exchange transfusion and lived.
2. Anencephaly with hydramnios.
3. Essential hypertension with associated toxaemia in a multipara 3 two weeks before the estimated date of confinement.
4. Anencephaly with hydramnios.
5. Severe pre-eclamptic toxaemia in a 24 year old primipara.
6. Severe pre-eclamptic toxaemia at 28 weeks associated with twin pregnancy in a multipara 6.
7. Exacerbation of hypertension in a multipara 6 at 31 weeks requiring tubal induction.
8. Pre-eclamptic toxaemia superimposed on essential hypertension in a multipara 3 at 32 weeks.
9. Accidental ante partum haemorrhage in a primipara at 28 weeks from a normally situated placenta.
10. Delay in second stage at full dilatation.

Regular Ante-Natal Supervision.

Yes	123	76.9%
No	33	20.6%
Not stated	4	2.5%

Dietary Deficiency.

Yes	11	7%
No	104	65%
Not known	45	28%

History of Habitual Premature Labour.

Yes	37	23%
No	117	73%
Not stated	6	4%

POSSIBLE CAUSE OF PREMATURITY.

1. Not known	59	37%
(*a*) Uncomplicated	15	
(*b*) Associated with hydramnios	4	
(*c*) Associated with toxaemia	2	
(*d*) Associated with placenta praevia	1	
2. Multiple Pregnancy—		
(*e*) Following history of habitual abortion	1	
(*f*) Associated with circumvallate placenta	1	
(*g*) Associated with macerated foetus	1	
(*h*) Triplets	1	
Total	26	16%
3. Toxaemia—		
Fulminating	9	
Mild	1	
Superimposed upon hypertension	4	
With associated ante partum haemorrhage	4	
Associated with foetal abnormalities	4	
In an epileptic superimposed on pyelitis	1	
Total	23	14%
4. Haemorrhage—		
Accidental	7	
Associated with toxaemia	4	
Associated with circumvallate placenta	1	
Total	12	7.5%
5. Hypertension—		
Causing placental insufficiency	1	
Associated with placenta praevia	1	
Treated with serpasil	1	
Needing induction	1	
Associated with fibroids	1	
Total	5	3%
6. Placenta Praevia—		
Uncomplicated	7	
One associated with hypertension	1	
One associated with twin pregnancy	1	
Total	9	5.6%
7. Placental Abnormalities—		
(*a*) Circumvallate placenta One associated with premature rupture of membrane. One associated with twin pregnancy. One associated with ante partum hæmorrhage.	4	
(*b*) Placenta accreta	1	
(*c*) Placental haemangioma causing hydramnios	1	
Total	6	5%
8. Premature rupture of membranes	12	7.5%
9. Rh incompatability	4	2.5%
10. Maternal jaundice.	All only 1 case each.	
11. Pyrexia for 12 days prior to confinement.		
12. Congestive cardiac failure.		
13. Unsuccessful attempt at external version of a breech.		
14. Foetal abnormalities associated with infectious hepatitis.		
15. Trauma causing rupture of membranes.		
16. Malnutrition.		
17. Hyperthyroidism with added virus infection.		
18. Amputation of cervix 10 years previously with five subsequent miscarriages.		
19. Low grade pyrexia prior to delivery.		

ABNORMAL CONDITIONS DURING PREGNANCY.

1. Nil	37
2. Multiple pregnancy—	
(*a*) Uncomplicated—	
Twins	17
Triplets	1
(*b*) Complicated—	
1. With toxaemia	4
2. With hydramnios (one with dead foetus)	3
3. Placenta praevia	1
4. Rh negative mother (no anti-bodies)	1
5. Threatened miscarriage	2
Total	29
3. Toxaemia 26, including four twin pregnancies and 1 with mucous colitis accompanied by toxaemic haemorrhage.	
4. Threatened miscarriages	22
5. Ante partum haemorrhage	7
6. Placenta praevia	6
7. Hydramnios (including 1 sudden onset with one dead twin; 2 associated with twins; 1 sudden onset associated with a dead abnormal foetus)	8
8. Nausea and vomiting	7
9. Breech presentation	2
10. Premature rupture of membranes	4
11. Severe hyperemesis with premature rupture of membranes	1
12. Premature ruptures of membranes with drainage of liquor for 2 weeks	2
13. Hypertension	2
14. Heart disease	1
15. Trauma	1
16. Psychosis	1
17. Mucous colitis with associated toxæmic haemorrhage.	
18. Threatened abortion at 3½ months followed by drainage of liquor from 4 months to 6 months.	
19. Congestive cardiac failure.	
20. Congenital heart condition associated with threatened miscarriage.	
21. Rh negative with rising anti-bodies.	
22. Thyrotoxicosis with terminal influenza.	
23. Transverse lie.	
24. Fibroid in left cornu.	
25. Infectious hepatitis.	
26. P.U.O. for 12 days prior to delivery with positive Weil Felix test.	
27. General debility and premature rupture of the membranes in a multipara eleven aged 27, with five living children.	
28. Severe pneumonia at 3 months.	
29. Persistent largactil jaundice.	
30. Epileptic psychosis.	

ABNORMAL CONDITIONS DURING CONFINEMENT.

1. Nil	89
2. Presentation—	
Breech—	
(*a*) Unassisted	23
(*b*) Precipitate labour	2
(*c*) Prolapsed cord	1
(*d*) Breech extraction following foetal and maternal distress	1
(*e*) Complicated breech delivery	2
Shoulder presentation with accidental haemorrhage.	
Triplets (two breeches and 1 vertix).	
Twins (one normal and one transverse).	
Twins, both complicated breech deliveries.	
Locked twins, the first a macerated fœtus and the second exomphalos.	
3. Haemorrhage—	
Accidental non-toxaemic ante partum haemorrhage	5
Accidental toxaemic haemorrhage	3
Concealed ante partum haemorrhage	1
Excessive haemorrhage from placenta praevia	1
4. Premature rupture of membranes	6
5. Manual removal of placenta	2
6. Febrile illness during labour	2
7. Prolapsed cord	1
8. Precipitate labour	2
9. Congestive cardiac failure	1
10. Severe post partum haemorrhage	1

SEX OF INFANT.

Male	103
Female	76

BIRTH WEIGHT OF INFANT.

Below 1 lb. 8 oz.	17
Between 1 lb. 8 oz. and 2 lb.	15
Between 2 lb. and 2 lb. 8 oz.	32
Between 2 lb. 8 oz. and 3 lb.	25
Between 3 lb. and 3 lb. 8 oz.	21
Between 3 lb. 8 oz. and 4 lb.	18
Between 4 lb. and 4 lb. 8 oz.	17
Between 4 lb. 8 oz. and 5 lb.	13
Over 5 lb.	10
Not stated	17

POSSIBLE CAUSE OF DEATH.

(Clinical Diagnosis.)

Prematurity Per Se	83
Not known	12
Cerebral haemorrhage	10
Atelectasis	6
Anoxia	6
Not stated	4
Congenital heart condition	3
Bronchopneumonia	3
Foetal abnormalities, including 2 Anencephalic monsters	3
Cerebral trauma and atelectasis	1
Asphyxia neontorum	1
Patent ductus arteriososis	1
Rh incompatibility plus hypoproteinaemia	1
Kernicterus	1
Exomphalos	1
Premature separation of placenta	1
Infective maternal hepatitis	1
Placental inadequacy due to hypertension	1
Pneumonia superimposed on atelactasis	1

CAUSE OF DEATHS IN BABIES OVER 4 POUNDS (31).

COUNTRY—METROPOLITAN.

Country or Metropolitan.	Birth Weight.	Period of Survival.	Abnormalities.	Cause of Death.
C	4 lb. 12 oz.	2 weeks	Had continuous oxygen	Pneumonia superimposed on atelectasis
M	4 lb. 9 oz.	2 days	Essential hypertension with anoxic placenta	Intra-cranial haemorrhage following precipitate labour
M	4 lb. 7 oz.	2 hours	Precipitate breech	Cerebral Trauma
C	5 lb. 2 oz.	14 hours	Caesarian Section for ante partum haemorrhage, due to placenta praevia	Anoxia
C	?6 lb. 4 oz.	12 hours	Caesarian Section for central placenta praevia	?
C	4 lb. 13 oz.	30 hours	Maternal congenital heart with mild toxaemia	?
C	4 lb. 2 oz.	4½ hours	History of habitual premature labour	? Was in humidicrib
C	4 lb. 0 oz.	26 hours	No abnormalities	?
C	4 lb. 7 oz.	2 days	Twin pregnancy	Cerebral haemorrhage
C	4 lb. 9 oz.	9½ hours	Caesarian Section for ante partum haemorrhage from placenta praevia	Anoxia
M	4 lb. 12 oz.	28 days	Nil	Congenital heart disease
C	5 lb. 4 oz.	2 days	Induction at 36/52	Rh incompatibility. No exchange transfusion
C	5 lb. 7 oz.	1 day	History of small babies on both sides of family	Atelectasis
C	4 lb. 11 oz.	12 hours	Placental Haemangioma causing excessive hydramnios	Cerebral haemorrhage
C	4 lb. 11 oz.	12 hours	2 live children from 10 pregnancies	? Cerebral haemorrhage from easy breech delivery
C	4 lb. 4 oz.	1 hour	Breech delivery	Cerebral Trauma
C	5 lb. 7 oz.	28 hours	Delay on perineum in a primipara followed by easy forceps	? Atelectasis
C	4 lb. 11 oz.	8 hours	Breech delivery	? Cerebral haemorrhage
C	5 lb. 1 oz.	2 days	Nil	? Atelectasis
C	5 lb. 2 oz.	Minute	Sudden gross hydramnios needing induction	Anencephaly
M	4 lb. 2 oz.	Minute	Multiple pregnancy	Atresia of Aorta (post mortem)
M	4 lb. 5 oz.	10 hours	Breech	? Intra cerebral haemorrhage
C	4 lb. 0 oz.	14 hours	Difficult breech	Intra cranial trauma
C	4 lb. 15 oz.	1 day	Nil	Congenital heart disease
C	4 lb. 1 oz.	40 minutes	Infectious hepatitis one week before delivery	?
C	5 lb. 4 oz.	36 hours	History of habitual premature labour in an aboriginal	?

Cause of Deaths in Babies Over 4 Pounds (31)—*continued.*

COUNTRY—METROPOLITAN.

Country or Metro-politan.	Birth Weight.	Period of Survival.	Abnormalities	Cause of Deatn.
M	4 lb. 13 oz.	24 hours ..	Essential hypertension with toxaemia. Breech	? Cerebral haemorrhage
M	4 lb. 12 oz.	2 days ..	Nil	Cerebral haemorrhage (post mortem)
M	4 lb. 5 oz.	10 hours ..	Toxaemia	Pulmonary collpase and hyaline membrane with a small bladder neck obstruction (post mortem)
C	5 lb. 8 oz.	24 hours ..	Acute Hydramnios with achondroplastic infant	?
C	4 lb. 8 oz.	1 hour ..	Acute Hydramnios	Gross foetal abnormalities
M	4 lb. 14½ oz.	— hours ..	Fulminating Pre-eclamptic toxaemia with a circumvallate placenta	Prematurity, Hyaline membrane, cerebral haemorrhage (post mortem)
M	4 lb. 13 oz.	— hours ..	Breech delivery	Hyaline membrane, generalised vascular congestion. Subarachnoid haemorrhagic diathesis (post mortem)
M	?5 lb. 10 oz.	7 days ..	Pyrexia prior to delivery, Breech	Meningitis E. Coli (post mortem)

Post Mortem Findings.

1. Subdural haemorrhage with partial atelectasis.
2. Prematurity.
3. Twins—
   No. 1 Atelectasis.
   No. 2 Subdural haematoma.

4 and 5. Pulmonary atelectasis with hyaline membrane (2).

6. Pulmonary atelectasis
7. Generalised vascular congestion.
8. Atresia of aorta.
9. Subdural and intracranial haemorrhage.
10. Atelectasis with jaundice.
11. Cerebral haemorrhage.
12. Pulmonary collapse with hyaline membrane and a small bladder neck obstruction.
13. Subdural haemorrhage.
14. Pulmonary atelectasis with congestion and interstitial haemorrhage.
15. Pulmonary haemorrhage of the new born.
16. Prematurity hyaline membrane cerebral haemorrhage.
17. Hyaline membrane. Generalised vascular congestion. Subarachnoid haemorrhage diathesis.
18. Extensive bronchopneumonia with abscess formation. Intestinal distension and a few areas of mucosal and submucosal necrosis. Prematurity.
19. Meningitis (E. Coli).
20. Subdural haemorrhage tear in falx cerebria. Prematurity.

21 and 22. Hyaline membrane disease.

23. Atelectasis.

APPENDIX "B."

A SURVEY OF HAEMOGLOBIN VALUES FOUND IN EXPECTANT MOTHERS.

During the year a survey was made on haemoglobin values in expectant mothers. From random estimations made at the Health Department Laboratory by means of the photo-electric cell technique a graph was obtained which showed the gradual fall and subsequent rise of the haemoglobin level in mothers who had had no previous iron therapy. Mothers below 20 and over 34 years were excluded as they were too few in number and as a group they showed too wide a variation in the values. This wide variation may later prove to be significant because these are the groups in which we expect to see anaemia—the young girl who does not care about regular meals and the older woman with added home responsibilities.

The critical period when iron deficiency makes itself most apparent appears to be between 14 and 29 weeks. Fifty-six per cent. of the expectant mothers had a hæmoglobin of less than 13G (86 per cent.) at some time during their pregnancies and a further 8.4 per cent. were less than 10.8G (72 per cent.) It was made a routine practice to treat all whose haemoglobin was less than 13.0G with some iron preparation: the ones used most being ferrous gluconate gr. 5 T.D.S. (referred to as A), ferrous sulphate gr. 3 in combination with cobalt and manganese 1 T.D.S. (referred to as B) but ferrous succinate gr. 2¼ T.D.S. either alone or with added B vitamin was also used. The use and efficiency of these various preparations was analysed by the Government Statistician from data available and from this it can be seen (see Table LV.) that A gives the greatest improvement in the haemoglobin level per week of treatment i.e., 0.1G per week and that B gives the poorest i.e. 0.05G per week. Preparation B has a price advantage over preparation A but the use of two tablets three times a day as seems to be necessary eliminates any such advantage.

The work done emphasises the following:—

(1) No one iron preparation can be guaranteed to work in all cases; the only way to control iron therapy is frequent repeat haemoglobin estimations.

(2) Oral iron can be effective more quickly if the degree of anaemia is severe than if it is moderate.

(3) Intra-muscular iron response is good but oral iron will do the same job if the patient is conscientious about its intake. Of course the nearer to term gross anaemia is discovered the more the need for parenteral iron.

(4) As the majority of mothers treated with iron can have haemoglobin levels approaching that of the non-pregnant, i.e. over 13.0G, there does seem to be iron deficiency in pregnant women rather than just physiological anaemia (See Davis and Jennison—The Journal of Obstetrics and Gynecology of the British Empire 1954).

(5) After birth the mother's haemoglobin rises in almost all cases including those who have responded to iron therapy during the pregnancy. The level at the end of eight weeks is just below that of the non-pregnant woman whose haemoglobin level should equal 15.0G.

TABLE LV.

Patients Treated with Iron during Pregnancy.

—	Ferrous Gluconate gr. 5 t.d.s.	Ferrous Sulphate (with Copper, Manganese) gr. 3 t.d.s.	Other Various Combinations and Preparations.
Cases treated	49	79	29
Averages—			
Week treatment commenced	23·4	19·5	19·9
Week treatment ended	33·6	32·8	32·4
Weeks of treatment	10·6	13·3	12·4
Level before treatment	11·67	12·26	11·82
Level after treatment	12·62	12·56	12·44
Level deficiency before treatment	0·68	0·33	0·65
Level surplus after treatment	0·18	0·19	0·09
Improvement in level	0·86	0·52	0·74
Improvement in level per week of treatment	0·10	0·05	0·08

ESTIMATED NORMAL HAEMOGLOBIN LEVELS (453 Cases.)

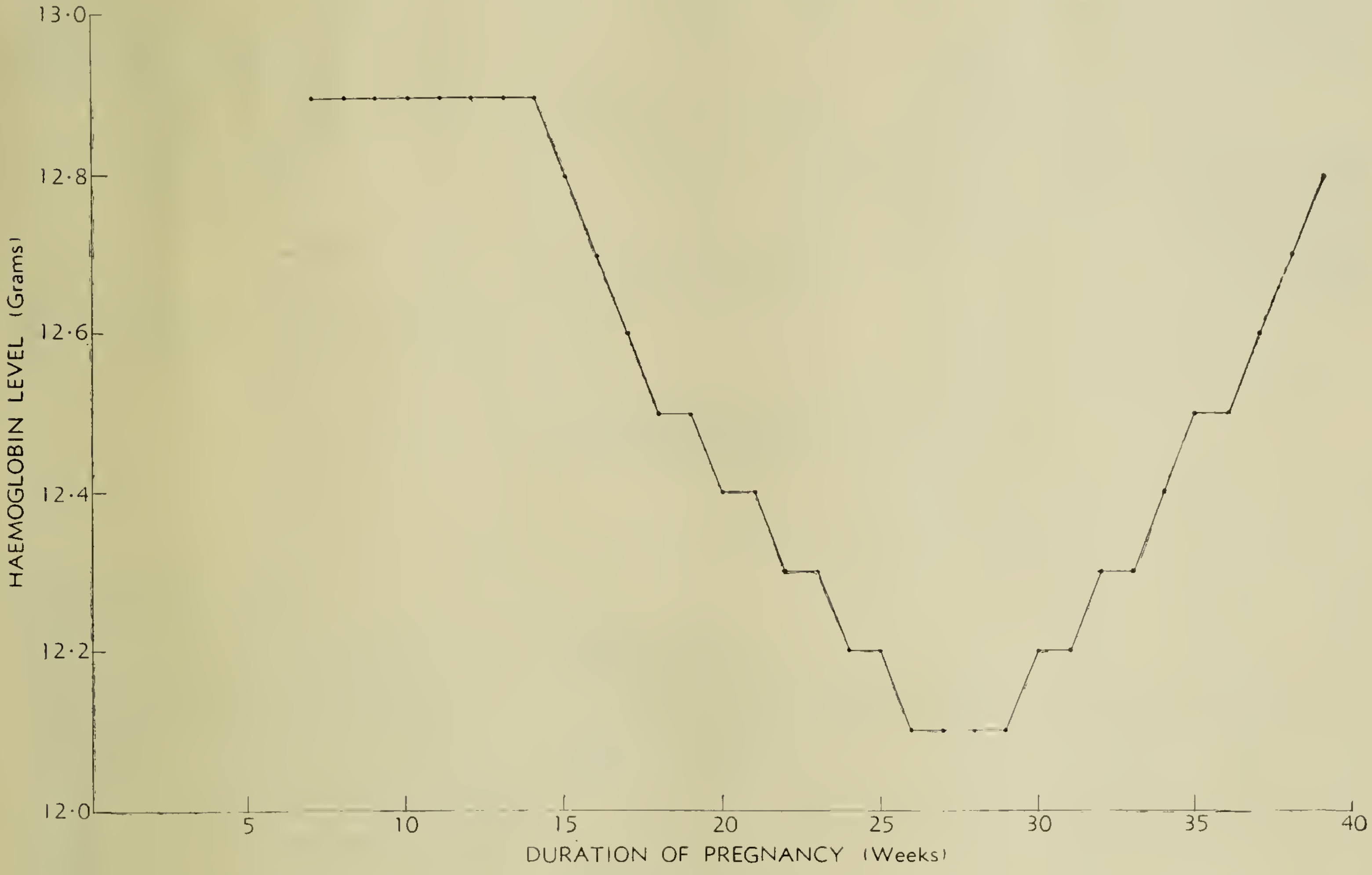

TABLE LVI.

Results of Examinations in Mothercraft for School Children, School Year Ending 1957.

Time.	Name.	Number in Class.	Number sat for Examination.	Number Obtaining Over 60 Per cent.
February–April . .	Indooroopilly State High School	95	92	73
	Salisbury State High School	114	107	100
	Cavendish Road State High School	125	117	97
	Brisbane Girls' High School	22	17	14
	Milton Primary School	63	61	54
	Petrie Terrace Primary School	16	12	11
May–August	Mitchelton State High School	67	64	58
	Banyo State High School	136	116	105
	State Commercial High School	56	49	41
	Domestic Science and High School—			
	Sub-Seniors	30	28	28
	Juniors	37	27	23
	Wynnum Intermediate School	160	107	99
August–December . .	Kedron State High School	142	132	125
	Ipswich State High School	112	100	83
	Camp Hill State Kigh School	31	31	31
	Brisbane State High School	43	37	37
		1,249	1,097	979
	Country Centres.			
	Charters Towers High School	30	25	20
	Winton State School	6	6	6
	Winton Convent	2	2	2
	Julia Creek State School	12	7	6
	Julia Creek Convent	. .	. .	. .
	Hughenden State School	17	14	11
	Hughenden Convent	. .	. .	. .
	Maxwelton State School	2	2	2
	Richmond State School	7	5	4
	Richmond Convent	. .	. .	. .
		76	61	51

TABLE LVII.

Causes of Deaths in Infants under One Year—Queensland, 1957.

Cause.	1956.	1957.				Increase or Decrease.
		Metropolitan.	Sub-Tropical. (a)	Tropical.	Total.	
Immaturity (unqualified)	188	49	74	40	163	−25
Immaturity with mention of any other subsidiary condition	1	..	..	1	1	
Congenital Malformations	135	49	45	38	132	− 3
Post-natal Asphyxia and Atelectasis	61	14	27	17	58	− 3
Intracranial and spinal injury at birth	47	33	23	13	69	+22
Other birth injury	45	11	17	10	38	− 7
Pneumonia of newborn	16	7	11	9	27	+11
Haemolytic disease of newborn (Erythroblastosis)	25	5	13	6	24	− 1
Neo-natal disorders arising from Maternal Toxaemia	15	4	4	2	10	− 5
Haemorrhagic disease of newborn	12	2	4	3	9	− 3
Diarrhoea of newborn	3	..	..	..	..	− 3
Other diseases peculiar to early infancy	25	10	11	11	32	+ 7
Total Diseases of early infancy	573	184	229	150	563	−10
Gastroenteritis and Colitis	23	2	4	12	18	− 5
Bronchopneumonia, other and unspecified Pneumonia	57	9	23	14	46	−11
Lobar Pneumonia	10	2	5	1	8	− 2
Whooping cough	..	..	3	1	4	+ 4
Diphtheria	..	..	..	..	..	..
All other causes	74	27	44	22	93	+19
Total Deaths under 1 year	737	224	308	200	732	− 5

(a) Excluding Metropolitan.

TABLE LVIII.

Causes of Deaths in Infants More Than One Month, but less Than Twelve Months of Age—Queensland, 1957.

Cause.	1956.	1957.				Increase or Decrease.
		Metropolitan.	Sub-Tropical. (a)	Tropical.	Total.	
Immaturity	1	..	..	..	..	− 1
Congenital Malformations	49	20	25	9	54	+ 5
Post-natal Asphyxia and Atelectasis	..	..	2	3	5	+ 5
Haemolytic disease of newborn	..	..	..	1	1	+ 1
Other diseases peculiar to early infancy	9	6	4	2	12	+ 3
Total Pre-natal Causes	59	26	31	15	72	+13
Bronchopneumonia, other and unspecified pneumonia	57	9	23	14	46	−11
Gastroenteritis and Colitis	23	2	4	12	18	− 5
Whooping Cough	..	..	3	1	4	+ 4
Lobar Pneumonia	10	2	5	1	8	− 2
Diphtheria	..	..	..	..	..	..
All other causes	58	20	34	17	71	+13
Total Deaths 4 weeks and under 1 year	207	59	100	60	219	+12

(a) Excluding Metropolitan.

TABLE LIX.

Causes of Deaths in Infants under One Month of Age—Queensland, 1957.

Cause.	1956.	1957.				Increase or Decrease.
		Metropolitan.	Sub-Tropical. (a)	Tropical.	Total.	
Immaturity (unqualified)	187	49	74	40	163	−24
Immaturity with mention of any other subsidiary condition	1	..	..	1	1	
Post-natal Asphyxia and Atelectasis	61	14	25	14	53	− 8
Congenital Malformations	86	29	20	29	78	− 8
Intracranial and Spinal injury at birth	47	31	23	13	67	+20
Other birth injury	45	11	17	10	38	− 7
Pneumonia of newborn	16	7	11	9	27	+11
Haemolytic diseases of newborn (Erythroblastosis)	25	5	13	5	23	− 2
Neo-natal disorders arising from Maternal Toxaemia	15	4	4	2	10	− 5
Haemorrhagic disease of newborn	12	2	4	3	9	− 3
Diarrhoea of newborn	3	..	..	..	..	− 3
Other diseases peculiar to early infancy ..	16	6	7	9	22	+ 6
Total Pre-natal Causes	514	158	198	135	491	−23
All other Causes	16	7	10	5	22	+ 6
Totals	530	165	208	140	513	−17

(a) Excluding Metropolitan.

TABLE LX.

Causes of Deaths of Premature (Immature) Infants.

——	1955.	1956.	1957.
Immaturity unqualified	137	188	163
Ill-defined diseases peculiar to early infancy, with immaturity	10	6	16
Post-natal Asphyxia and Atelectasis, with immaturity	40	38	34
Intracranial and Spinal injury at birth, with immaturity	13	12	14
Other birth injury, with immaturity	31	29	22
Neo-natal disorders arising from Maternal Toxaemia, with immaturity	14	11	7
Pneumonia of newborn, with immaturity	8	3	3
Haemorrhagic diseases of newborn, with immaturity	..	2	..
Haemolytic Disease of Newborn, with immaturity	6	7	1
Nutritional Maladjustment, with immaturity	..	1	1
Immaturity with mention of any other subsidiary condition	4	1	1
Umbilical Sepsis, with immaturity	..	1	..
Other Sepsis of newborn	..	..	..
Diarrhoea of the newborn	..	..	..
Totals	263	299	262
Total under one year	263	299	262
Total under one month	259	297	260

TABLE LXI.

Accidental Deaths of Children (aged 1 and under 15 years) in Queensland.

—	1952.		1953.		1954.		1955.		1956.		1957.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Road Accidents ..	15	10	15	9	18	11	15	9	14	9	20	9	154
Firearms	1	1	3	1	5	..	2	..	3	..	..	..	16
Drowning	10	7	12	4	10	4	17	1	21	5	16	6	113
Falls	2	1	3	2	3	..	1	..	5	2	1	1	21
Other Accidents ..	29	12	22	19	21	13	21	18	19	17	25	11	227
	57	31	55	35	57	28	56	28	62	33	62	27	531
Totals	88		90		85		84		95		89		531

In 1957, twenty-nine deaths in this age group were caused by road accidents, 20 males and 9 females. The total number of deaths was 89—6 less than the previous year—and the ratio of males to females was more than 2:1.

The following Table LXII. shows the main abnormalities found at half-yearly examinations in the Metropolitan Centres:—

TABLE LXII.

Enlarged tonsils	1,670
Knock knees	1,609
Flat feet	256
Bow legs	225
Carious teeth	216
Adenoiditis	144
Stained teeth	83
Umbilical hernia	81
Cardiac murmur	54
Tonsillitis	44
Intoeing	34
Skin rash	32
Pronated feet	30
Allergy	21
Naevus	22
Squint	17
Inguinal hernia	13
Birth mark	12
Hydrocele	11
Cyst	10
Pilonidal cyst	9
Boils	7
Geographical tongue	6
Conjunctivitis	5
Webbed toes	5
Ringworm	5
Enuresis	5
Impetigo	5
Chalky teeth	5
Undescended testes	4
Bronchitis	4
Postural defects	4
Deafness	3
Congenital heart	3
Mentally retarded	2
Otitis media	2
Ichthyosis	2
Lipoma	2
Miscellaneous	11

The following Table LXIII. shows the main abnormalities found at half-yearly examinations at Country Centres:—

TABLE LXIII.

Intoeing	26
Umbilical hernia	25
Flat feet	20
Squint	11
Adenoiditis	9
Knock knees	8
Bow legs	8
Undescended testes	4
Enlarged tonsils	3
Hydrocele	2
Thread worms	2
Allergy	2
Miscellaneous	10

TABLE LXIV.

Correspondence Section—Ante-Natal.

—	Year Ending 30–6–1958.
Circular letters forwarded to expectant mothers—No. 1	5,822
Circular letters forwarded to expectant mothers—No. 2 *re* " The Expectant Mother " books	2,975
Response to circular letters	1,733
Serial Letters to expectant mothers	11,509
Letters received from expectant mothers	478
Special letters of advice sent on request	131
Copies of " The Expectant Mother " sent on request	1,484
Requests from country centres and hospitals for " The Expectant Mother " book	777
Copies of " Ante-natal and Post-natal Exercises " sent on request to expectant mothers	1,543
Requests from country clinics for " Ante-natal and Post-natal Exercises "	726
Copies of baby patterns sent on request	245
Copies of maternity belt patterns sent on request	17

Through the Correspondence Service more mothers have been contacted and the increased responses and letters have shown interest and appreciation.

During the year, hospitals are written to, requesting lists of Expectant Mothers' bookings to be sent regularly and from them much co-operation has been received.

TABLE LXIV—*continued.*

Correspondence Section—Post-Natal.

—	Year Ending 30–6–1958.	Year Ending 30–6–1957.
Number of birth notifications received	6,164	6,151
Number of circulars posted—		
(1) Within reach of centre	2,490	1,964
(2) Not within reach of centre	3,674	4,187
Number of follow-up circulars posted	3,382	3,882
Letters to correspondence in response to Circular No. 2	863	975
Visits to clinics in response to Circular No. 1	. .	479
Letters of advice *re* feeding and management sent on request	1,689	1,956
Number of " Care of Mother and Child " sent on request	926	976
Number of extra " Care of Mother and Child " sent on request	107	95
Number of pamphlets sent advising triple antigen immunisation	6,164	8,252
Number of birthday cards sent during the year	203	222
Number of telephone calls received *re* feeding and management	186	185

TABLE LXV.

Summary of Ante-Natal Cases.

—	Cases Completed by 30–6–58.	Cases Incompleted by 30–6–58.
Non-pregnant	7	0
Primiparous	88	53
Multiparous	299	135
Rh negative	59	23
Rh negative (with anti-bodies)	1	1
Toxaemia requiring hospitalisation	85	3
Toxaemia requiring home treatment	96	29
Morning sickness	75	63
Leucorrhoea	86	33
Threatened miscarriage	10	14
Miscarriage	5	2
Still-birth	7	0
Neo-natal death	4	0
Polyneuritis	1	1
Haemoglobin 13.0.G.	240	82
Haemoglobin 10.9.G.	36	12
Cystocoele	26	8
Rectocoele	7	3
Cystocoele and Rectocoele	11	10
Contracted pelvis	1	0
Twin pregnancy	6	0
Caesarean section	4	0
Haemorrhoids (severe)	1	0
Retroversion	13	7
Renal glycosuria	1	0
Placenta praevia	2	0
Face presentation	2	0
Urinary tract infection	10	6
Essential hypertension	5	13
Essential hypertension with associated toxaemia	18	2
Thrombophlebitis	1	0
Mastitis	1	1
Syphilis	1	0
Cervical erosion	2	1
Cardiac murmur	9	6
Varicose veins (severe)	21	16
Nervous collapse	3	0
Fibroids	2	0
Epilepsy	1	1
Sarcoidosis	1	0
German measles	1	0
Nutritional oedema	2	0
Gastric ulcer	1	1
Mitral stenosis	1	0
Infectious hepatitis	1	0
Post-maturity	18	0

The mother with syphilis was an unmarried primipara of low intelligence who first reported when thirty-four weeks pregnant; a positive Wasserman was found on routine blood examination. The babe appeared normal at birth.

Babies.

Congenital abnormalities	8
Haemorrhagic diseases	2

The congenital abnormalities were as follows:—

(1) Multiple abnormalities including hydrocephalus and short limbs.
(2) Absence of toe-nails.
(3) Accessory skin tag near the auricle.
(4) Hare lip and cleft palate.
(5) One leg smaller than the other.
(6) Bilateral talipes.
(7) Stenosis of the duodenum.
(8) Blindness.

There were eleven still-births and neo-natal deaths. The following is a brief summary of each:—

(1) Severe Rh incompatibility in a multipara at 27 weeks resulted in intra-uterine foetal death. When this mother came into labour seven weeks later she developed afibrinogenaemia requiring transfusions.

(2) Revealed and concealed non toxic ante-partum haemorrhage in a multipara at 28 weeks.

(3) Cerebral haemorrhage in the second of twins (vertex delivery) in a young primigravida.

(4) Intra-uterine infection in a multipara followed by a long labour.

(5) Twins born prematurely at 28 weeks in a multipara who had been in chronic ill-health throughout the pregnancy.

(6) Hydrocephalus resulting in a difficult labour in a primipara.

(7) Difficult breach extraction of a large baby in a multipara after rotation of a persistent mento posterior resulting in bleeding.

(8) Death during a long labour in a post-mature primipara who had associated pre-eclamptic toxaemia.

(9) Fibroids in an elderly primigravida caused by premature labour and the baby died of atelectasis.

(10) Premature labour in a multipara with essential hypertension who had a history of recurrent premature labour (this mother had been given ethisterone early in the pregnancy.)

There were four Caesarean sections:—

(1) A repeat section in a multipara the initial one being for severe pre-eclamptic toxaemia.

(2) Placenta praevia in a multipara; this caused bleeding.

(3) Placenta praevia in a primipara: this was central in position.

(4) A repeat section in a multipara: the scar was tender and there had been sufficient blood loss per vaginam to suggest a placenta praevia.

SUMMARY OF POST-NATAL CASES.

Primparous	42
Multiparous	146
Sub-involution	11
Retroversion	41
Cystocoele and Rectocoele	15
Cystocœle	21
Rectocoele	6
Cervical erosion	1
Vaginitis	10
Infected lochia	1
Hypertension	26
Retained products	11
Fibroids	1
Thrombophlebitis	1
Badly lacerated perineal body	3
Uterine and tubal infection following curette	1

A survey was made on 34 primipara and 114 multipara to determine when movements were first felt—

Primipara	—19·7 weeks
Multipara	—17·9 weeks

DIVISION OF SCHOOL HEALTH SERVICES.

Chief Medical Officer: P. R. Patrick, M.B., B.S. (Qld.).

Chief Dental Officer: T. D. Pugh, L.D.S. (Eng.) L.D.Q.

SALK VACCINE CAMPAIGN.

Liaison Medical Officer: V. M. O'Hara, M.B., B.S. (Syd.).

Campaign Organiser: W. T. Johnston.

General Outline of Year's Activities.

The year saw the completion of the important public health task of immunising children throughout the State against poliomyelitis using Salk vaccine; a return to routine school health work by the permanent nursing staff; a continuation of school dental services and planning for the Salk Vaccination programme in older age groups.

By the end of June, 1958, all children in the six months to fourteen years age groups, with the exception of those in a few outlying areas, had been given the opportunity of three injections of Salk vaccine. It is expected that all areas throughout the State will have been completed by the middle of July, 1958. As the Salk vaccine programme was so well advanced by the end of 1957 and there was increasing evidence of the need for a resumption of routine school health duties by permanent sisters who had been employed full-time on Salk vaccination duties, it was decided that these sisters should return to their normal duties at the beginning of the 1958 school year. The Salk campaign in the main was then completed by temporary nursing staff. With the completion of Salk vaccination of children, except for new babies reaching the eligible age of six months, supplies of vaccine are now available for immunisation of older age groups. The Government decided to follow the recommendation of the National Health and Medical Research Council of offering vaccine to all age groups up to forty-four years and to invite Local Authorities to take over the new programme. By the end of June, 1958, most country Local Authorities had signified their willingness to offer Salk vaccine to all groups in the eligible age range. Due to the large number of persons involved, the Brisbane City Council advised their willingness to immunise new babies and complete courses for school-age children, but requested the Government to carry out the programme in the older age groups.

Under the supervision of Mr. T. D. Pugh, who succeeded Mr. G. O. Hosking as Chief Dental Officer, school dentists continued to give a much-needed dental service to children at country schools in Queensland.

Salk Vaccine Campaign.

It is pleasing to report the continuance of the smooth running of the campaign which marked the first year of operation. This has been due to the excellent service given by the executive officers and nursing staff and the ready co-operation of the many agencies whose help was so necessary to maintain an efficient campaign. Dr. V. M. O'Hara, the Liaison Medical Officer, Miss D. Bardsley, Adviser in Nursing, and Mr. W. T. Johnston, Campaign Organiser, all deserve special mention for the ready manner in which they carried out their particular duties. Praise must be given too for the excellent service of the nursing staff who performed the actual work connected with the administration of the vaccine. In the country areas, the complete organisation was left to the nursing staff and it is fitting to place on record the efficient manner in which the task was performed.

In the main, the programme during the year consisted of completing the recommended course of injections by giving the third injections to those children who had received two injections in the previous year, and commencing the immunisation in new babies who had reached the eligible age of six months. During the previous twelve months 385,917 children had commenced their immunisation course. By the end of the present year 345,476 children had completed the course of three injections. During the year 17,878 new children commenced immunisation making a total 403,795 children throughout the State who have had one or more injections. In July, 1956, it was estimated that there were approximately 400,000 children in the eligible age range. In the two years since commencing the campaign, approximately 60,000 new babies would have become eligible. The proportion of children who have commenced immunisation is approximately eighty-eight per centum of the eligibles. There has been a drop in response since the previous year, due mainly to fewer new babies being enrolled, caused not entirely by lack of parental response but in some measure to the fact that the difficulties in supply and despatch restrict the number of times that supplies can be forwarded to country areas.

Supply and Distribution of Vaccine.

All countries engaged in the manufacture of Salk vaccine have experienced difficulties in maintaining a continuous supply of vaccine. The stringent safety tests imposed and the intricate technical processes involved in production have at times caused gaps in the programme. This has been far outweighed by the fact that all vaccine supplied by the Commonwealth Serum Laboratories has been fully potent and safe. At all times, the officers from these laboratories and the Commonwealth Health Department in Queensland have been most courteous and helpful in the matter of supplies. The short life potency of Salk vaccine even at optimum temperatures demands the packing of country supplies in a cold room into refrigerated boxes, its despatch by plane or paper cars often leaving at early hours and its immediate transfer on arrival into adequate refrigeration. The fact that during the year, not one batch lost any potency due to mishap during these procedures indicates the efficiency of the organiser and his despatch officers; the co-operation received from Red Cross Blood Transfusion Service where the vaccine was packed as well as efficient transport companies and conscientious local health inspectors who met the various planes and cars.

Special Programmes.

While the majority of children received the vaccine at schools where a vaccinating team consisting generally of private practitioners, who were employed on a sessional basis, and two full-time school health nurses, it was necessary to make special provisions in some instances.

The first of these included those children, who due to illness or other causes, were not able to attend the schools when their particular group was receiving injections. In Brisbane these children received their injections at a central clinic at the State Health Department, William Street. At these clinics, two vaccinating teams from School Health Services received splendid voluntary assistance from members of the Nursing Division of the St. John's Ambulance Brigade. At these central clinics 23,721 injections were given to children.

In the country similar clinics were arranged at the headquarters of Salk vaccine districts. In other country areas, medical superintendents of public hospitals carried out these missed injections.

The Royal Flying Doctor Service again co-operated in giving injections to children in outlying areas based on centres at Charters Towers, Cloncurry and Charleville. The visits included mission stations in the Gulf of Carpentaria where aboriginal children received injections. The total number of injections given by the Flying Doctor Service was 2,417. Dr. T. O'Leary of this service also gave third injections to children in the Torres Strait Islands which had been visited earlier by medical officers from the Department when the initial immunisation was carried out.

At Isisford, Aramac, Muttaburra, and Thursday Island, local medical practitioners and school teachers co-operated to complete the course of injections commenced at hospitals at these centres where it was difficult for a School Health vaccination team to visit.

The Older Age Groups.

In the initial campaign, two groups were given equal priority in the allocation of supplies. These were the six months to fourteen years age group and pregnant women in whom the incidence and severity of poliomyelitis is much higher than non-pregnant women of similar age. Supplies for pregnant women are made available in this State to private practitioners and ante-natal clinics at public hospitals on application to the Director-General of Health and Medical Services. During the year 14,773 antenatal cases received injections. Vaccine has also been made available to the nursing, medical and physiotherapy staffs of hospitals throughout the State. In addition some adults have received injections when a small number of doses have been left in the last ampoule opened for children. In all 14,872 injections were given to adults (other than ante-natal cases) throughout the year.

During the forthcoming year, it is planned to make vaccine available to all people up to the age of forty-four years inclusive. School Health Services vaccinating teams will visit secondary schools, university centres, apprentice evening classes, the Teachers' Training College, and any factory, firm or government department where large numbers can be assembled. Evening clinics will be held in four zones in the Greater Brisbane area.

Efficacy of the Campaign.

The true assessment of a campaign of this nature is the incidence of the disease. However, poliomyelitis is noted for its periodicity—years of epidemicity alternating with years of low incidence. In the first year of the campaign, the number of confirmed cases in the State was thirty-seven and this last year was entirely free of cases originating in Queensland. From six poliomyelitis-like cases notified, faecal and serum samples were sent to the Commonwealth Serum Laboratories in Melbourne for investigation. The results, along with a special case history, were examined by the Poliomyelitis Surveillance Committee set up by the National Health and Medical Research Council. Only one case was confirmed as poliomyelitis. This occurred in an English migrant girl who developed the disease aboard ship and was taken to hospital immediately on arrival. The other five cases were considered by the committee to be not poliomyelitis, but similar diseases as Landry's paralysis or polyneuritis.

One must still be very cautious in interpreting this low incidence as due to the vaccination programme. The future, no doubt, will give the answer.

TABLE LXVI.

Showing Various Statistics Regarding the Campaign in Children.

Number of children who received one or more injections at 30th June, 1958	403,795
Number of children who completed the the course of three injections in 1956-57	3,828
Number of children who completed the course of three injections in 1957-58	341,648
Total number of children who had completed the course of three injections at 30th June, 1958	345,476
Number of children who received first injections in 1957-58	17,878
Number of injections given by the Royal Flying Doctor Service, 1957-58	2,417
Number of expectant mothers who received injections in 1957-58	14,773
Number of other adults who received injections in 1957-58	14,872
Total number of injections given 1956-57	789,368
Total number of injections given 1957-58	392,608
Total number of injections given since commencement of campaign	1,181,976

SCHOOL HEALTH SERVICES.

School Health Training Course.

During the period School Health Services were engaged in the Salk vaccination campaign, several new sisters joined the permanent staff. On the return of the permanent staff to routine school health duties it was decided to run a training course for these new sisters and for all Brisbane sisters. The course was arranged by Dr. V. M. O'Hara, School Medical Officer and by Miss Bardsley, Adviser-in-Nursing. In addition to lectures and demonstrations in school health work, the course included lectures and visits at other public health departments and handicapped children centres. The course gave the nurses a broad public health background as well as training in the particular field of school health.

Routine Medical Inspections.

As the permanent school health sisters were engaged in Salk vaccination duties during the whole of 1957, this report covers only five months of school health work which recommenced at the beginning of the 1958 school year. Throughout the State, 173 schools were visited and 24,618 children examined by the medical and nursing staff in that time. Amongst these children, 1,118 were found to have physical or mental defects about which further medical attention was considered necessary and their parents were notified accordingly. This represents some seven per cent. of all children examined and is higher than the four or five per cent. found with defects in previous years. This increase was expected as no routine school health visits had been carried out since the commencement of the Salk vaccine campaign. It is interesting to note that eye defects comprised almost half the defects for which children were notified. Of all defects found by school health officers, this is the one which escapes the notice of parents most. In many cases other defects gradually come to the notice of parents and receive attention. Eye defects, however, unless severe, often pass unnoticed until discovered at routine medical examinations.

Audiometric Survey.

During the last four or five years in Queensland, special interest has been taken in the education of the deaf child. To a very efficient school for the deaf which used the manual as well as oral method of teaching, the Education Department has added an oral school for deaf children where oral methods only are used. This school caters for children from the age of four years upwards. There has also commenced functioning an Oral Kindergarten school for younger children which is conducted by a voluntary organisation.

Children who seek admission to the Oral school are closely investigated by an Oral Ascertainment Committee of which the Chief Medical Officer of School Health Services is a member.

To assist in determining the future needs for the education of deaf children in this State, School Health Services has undertaken a special audiometric survey using portable audiometers supplied by the Commonwealth Acoustic Laboratory.

The survey commenced in March, 1958, when school sisters screened all children in grades one and two with the audiometer when they visited schools to carry out their routine school health examinations. Up to the end of June, 1958 children examined in this manner numbered 2,199. Of these twenty-five children had a hearing loss of 35 decibels or more in at least one ear. These children have all been referred for more detailed investigation by the Commonwealth Acoustic Laboratory. In addition, a further twenty-six children had minor hearing losses which will be closely watched. During the screening of all children in the two lower grades mentioned, children in upper grades were also examined in cases where a history of ear trouble or suspected deafness was given by the teacher or parents. In these upper grades forty-one children were deaf enough to warrant further investigation. The survey is continuing and when larger numbers of children have been examined, it will be possible to give a true picture of deafness among Queensland children.

Communicable Diseases in Schools.

Once again a year free of any serious epidemic in school children is reported. During the winter of 1957 there was the usual amount of absenteeism due to upper respiratory infection but otherwise the incidence of communicable disease was low. Diphtheria cases numbered four; scarlet fever, which at the present time is a mild disease, was responsible for 121 notifications in school children. For the first time for many years there was not one confirmed case of poliomyelitis among Queensland school children. The only case in a school-age child occurred in a migrant on her way to Queensland.

However there are two diseases about which there should not be any complacency. They are tetanus and rheumatic fever. Thirteen cases of tetanus occurred in school children during the year. With the protection afforded by tetanus immunisation which is given free by most local authorities in the State, there should have been none. There is no doubt that with the advent of combined antigens now used almost universally in the immunisation of babies, the proportion of children protected against tetanus will grow. There is however still a pressing need to protect the older children who were immunised with single antigens for diphtheria and often whooping cough, but not for tetanus.

One point noted in the 157 notifications for rheumatic fever in school-age children was the considerable number which came from the Darling Downs. Superintendants of hospitals in that area had also noted the increase in this disease but offered no firm explanation.

The policy of tuberculin testing for tuberculosis of school leavers continued. In Brisbane the testing was performed by the Chest Clinic. In country areas, School Health sisters will gradually co-operate more and more with the Division of Tuberculosis and it is hoped that in time this scheme will be extended to include the whole of Queensland. In Brisbane 7,617 children were tested and 1,758 children gave a positive reaction. This represents a percentage of twenty-three, which is higher than in southern States. Reports from the Division of Tuberculosis indicate that the percentage of reactors in North Queensland is even higher.

Special Education.

School Health Services continued its co-operation with other agencies in the investigation of children requiring special education. The work performed by this Branch with deaf children has already been mentioned. In addition to the routine medical examinations conducted at schools and consultation there with teachers regarding children who are educationally backward special examinations are held at William Street headquarters where parents are interviewed and a thorough physical check is made. These examinations assist the Remedial Education Centre of the University of Queensland and the Research and Guidance Branch of the Education Department in assessing the extent that physical defects retard these children in their school progress.

At the request of the University of Queensland, School Health Services has assisted for the first time in the training of medical students in Social Pediatrics. Sixth-year students visit the various institutions for handicapped children. Each student is allotted a child to study and a report is submitted at a group discussion at the end of the term. It is believed that the scheme will benefit greatly the student in his study of handicapped children and acquaint him with the facilities available in the State for the treatment and education of such children. The various agencies are pleased with the innovation as they believe that the future practitioners will have a first-hand knowledge of their institutions and know immediately the procedure to be adopted when presented with a particular type of handicapped child.

THE SCHOOL DENTAL SERVICE.

The small dental staff continues to give a satisfactory service to children in remote areas of the State. Except for special services to institutions under the supervision of the State Children Department, the fifteen dentists in the service are all employed in country districts. In fact, the present policy lays down that, while there is a shortage of school dentists, dentists will not visit schools within a radius of fifteen miles of a hospital board dental clinic. In this way, priority is given to children attending schools furthest away from other dental facilities.

The four rail dental clinics are allotted to schools on the three main inland railway lines and on the Atherton Tableland. During the year, the clinics visited such places as Eromanga, Quilpie, Yalleroi, Blackall, Camooweal, and Ravenshoe, as well as many other outback centres.

School dentists examined 24,730 children. Of these 18,688 children needed dental attention at the time of the examination. This represents 76 per cent. Of these 8,725 children were treated by the school dentists. The remainder indicated their desire for private attention and were referred to their own dentist.

TABLE LXVII.

DETAILS OF ROUTINE SCHOOL HEALTH EXAMINATIONS.

(From beginning of 1958 only).

Schools visited	173
Children examined	24,618
Number of children with defects requiring attention	1,118
Apparent physical defects notified—	
Defective vision	521
Strabismus	56
Other eye defects	26
Deafness	66
Ear, nose and throat defects	155
Scrotal and groin swellings	27
Postural defects	45
Lower limb defects	115
Cardiac defects	10
Skin infections	115

TABLE LXVIII.

COMMUNICABLE DISEASES IN SCHOOL CHILDREN, 1957-58.

Disease.	Number of Cases.
Diphtheria	4
Scarlet fever	121
Poliomyelitis	1*
Lead poisoning	4
Meningitis (Cerebro-Spinal)	10
Tuberculosis	19
Typhoid fever	1
Rheumatic fever	157

*Contracted outside Queensland.

TABLE LXIX.

TREATMENT FOR CORRESPONDENCE PUPILS.

Number of Children Treated.	Number of Extractions.	Number of Fillings.	Number of Other Treatments.
32	27	59	25

TABLE LXX.

TREATMENT OF SCHOOL CHILDREN AT BRISBANE DENTAL HOSPITALS.

Number of Children Treated.	Number of Extractions.	Number of Fillings.	Number of Other Treatments.
26,648	28,585	103,225	44,399

TABLE LXXI.

TOTAL TREATMENT FOR YEAR.

Number of Children Examined.	Number of Children Treated.	Number of Extractions.	Number of Fillings.	Number Other Operations.	Number Teeth Treated.
24,730	8,725	8,849	21,319	10,607	27,844

TABLE LXXII.

Number of Children Examined.	Number Notified for Professional Attention.	Number of Children under Regular Dental Care.			Number with Sound Mouths.		Carious Teeth Saveable (Permanent).	Carious Teeth Unsaveable (Permanent).	Temporary Carious Teeth.	Permanent Teeth Lost or Extracted.	Six-year Molars Extracted.
		Clinic.	School Dental Officer.	Private Dentist.	Natural.	Operatively Restored.					
24,730	5,543	612	5,240	6,481	1,308	4,734	30,779	4,833	29,742	12,561	9,200

TABLE LXXII.—*continued.*

Permanent Teeth Filled.	Temporary Teeth Filled.	State of Mouth. *			Use of Tooth Brush.†			Percentage of Children with Dirty Mouths.	Total Number of Defective Permanent Teeth.	Average Number of Defective Permanent Teeth per Child.
		A.	B.	C.	A.	B.	C.			
50,924	9,673	8,074	14,447	2,209	8,346	11,058	5,326	9.1%	35,577	1·4

*State of Mouth—

A—Good Standard of Mouth Health.
B—Fair Standard of Mouth Health.
C—Bad Standard of Mouth Health.

†Use of Tooth Brush—

A—Regularly clean the teeth.
B—Occasionally clean the teeth.
C—Never clean the teeth.

DIVISION OF MENTAL HYGIENE.

Director of Mental Hygiene: B. F. R. STAFFORD, M.B., B.S. (Melb.).

Several factors that continued to operate during the fiscal year 1957-58 to lessen accommodation problems have produced satisfactory results. The greatest factor proved to be the continuation of the policy of developing annexes for senile patients in public hospitals and next to this was the provision of additional accommodation.

The overall picture is satisfactory. Over recent years the trend towards overcrowding has been checked and some accommodation previously used as dormitories has reverted to other functions, such as increased day-room space and better amenities for staff.

Dr. Stoller's report published in 1955 estimated that between 1965-70, Queensland's population would be 1,626,000, requiring a total of 6,504 beds in mental hospitals. (This was based on 4 beds being needed per 1,000 population.) A more recent statistical estimate indicates that Brisbane's anticipated population by 1970 would be 760,000; the population of Queensland exclusive of Brisbane 1,040,000, and the total population 1,800,000. On the basis of 4 beds per thousand, 3,040 beds for the metropolitan area would be required by 1970; 4,160 beds for extra-metropolitan area required for the whole of the State; or a total of 7,200 beds.

It could be taken that Dr. Stoller's estimate of about 6,500 beds by 1970 was not excessive.

A considerable number of the additional patients (approximately 33 per cent. of admissions) will be senile. Therefore, active and progressive furtherance of the policy of hospital annexes is urgent. This in itself could largely offset the extra beds required in the metropolitan area.

A considerable increase in population outside Brisbane is anticipated and this would indicate that additional mental hospital beds will be needed.

There are a number of patients in all mental hospitals who recover sufficiently to become useful members of the hospital community, but at the same time have developed a dependence that prevents them adjusting satisfactorily in the community. A vigorous campaign has commenced in our mental hospitals specifically directed against measures calculated to "institutionalize patients." It can be confidently expected that as a result more patients will be rehabilitated. However, the process of reconditioning to new attitudes and responsibilities must be slow if it is to achieve permanent results. There is no doubt that this policy will reduce beds needed in the course of time.

The Department is anxious that all persons who suffer from mental sickness and recover from such illness should have the opportunity to get well before admission to a mental hospital. The active implementation of this policy will mean closer co-operation with general hospitals, provision of new services, expansion of existing services and establishment of facilities for longer treatment recoverable patients.

It must always be remembered that mental sickness has certain implications which make it different from physical sickness. Frequently the mentally sick person would actively refuse treatment and at a time when it could do most good. Occasionally the recoverable mentally sick patient is so disturbed as to need some restraint for his own good. In an endeavour to orientate mental sickness closely to physical ills, the protection of personal liberties and rights must not be lost sight of.

One of the outstanding events of the past year was the visit to Brisbane of the Directors of the Mental Hygiene Departments of all the States, except South Australia. Although the conference was convened as a sub-committee of the State Health Ministers' Conference, it also functioned as a Conference of Directors. The value of the exchange of knowledge and ideas cannot be over-estimated. and this State's Mental Hygiene Service was both honoured and benefited by the visit.

The inauguration of the Nursing Training School at Mosman Hall, Charters Towers, is another milestone of note.

The appointment of a qualified tutor-sister to this Division is a great advance. It is expected that, with reduced overcrowding and improved teaching and organisation in the training schools, the efficacy of treatment must also improve.

The reports of the medical superintendents of the three mental hospitals and of the Psychiatric Clinic and Epileptic Home, together with statistical tables are appended.

BRISBANE MENTAL HOSPITAL.

Medical Superintendent: C. R. BOYCE, M.B., Ch.M. (Syd.).

Activities during the year under review have been maintained and in many directions improvements have been brought about.

It is considered appropriate to refer briefly to the undermentioned projects that have eventuated.

1. A TUTOR-SISTER HAS BEEN APPOINTED.

Miss V. Smith comes to us in the midst of a brilliant nursing career locally and overseas and, following survival of prisoner-of-war experiences in Sumatra (she was of 13 A.G.H. personnel and gained knowledge of the Mental Hospital at Johore Bahru), she brings enthusiasm and new ideas. She properly places heavy emphasis in her teaching upon the nurse-patient relationship and everything possible is being done to encourage her.

2. Larger Medical Officer Establishment.

There are eight in residence, one part-time and another appointed and about to start. Further appointments are expected when the Director-General of Medical Services returns from overseas in July.

All modern forms of psychiatric treatment are in practice; the claims of various drug manufacturers have been given adequate trial; psychotherapeutics including group activities are forging ahead and are of extreme importance in the investigation and classification of chronic hospitalised patients.

Everything is being done to prevent development of chronicity and those already chronic are regarded as potential salvage for some degree of rehabilitation.

More doctors are needed and more are provided for in the establishment budget.

3. A New Ward Has Been Opened and Placed in Function.

Farm Colony B. Ward, to comfortably accommodate at least 100 male patients, has been added as an integral unit "on the Hill." This phrase implies its geo-physical location with a magnificent panorama for miles on all sides. It is a mile or more from the main hospital. It is an open ward with minimal nursing staff and houses patients who have responded well to active treatment, who have high potentialities towards recovery and discharge or whose discharge is pending. Almost all usual restrictions and disciplines have been removed and ward autonomy is promulgated and encouraged.

In the short space of a few weeks under the supervision of Dr. Irene Waga some 40 patients have had meetings, debates, election of committees and the second edition of their little paper "Colony Times" has been circulated. Several patients have journeyed to Brisbane seeking jobs and one to date has been successful.

The need for mentally trained social service workers is becoming more apparent with the establishment of Farm Colony B Ward.

One of the mentally deficient boys of neighbouring A Ward has graduated to B Ward and will join a small group there employed in agricultural pursuits.

4. A Full Time Psychologist Has Been Appointed.

Mr. R. Schlesinger came to us just over five years ago as a New Australian male nursing trainee. He literally "flew" through his mental nursing, acquired his M.N.C. and employed as a male nurse has now, thanks to Departmental help, acquired his B.A. at Queensland University majoring in Psychology.

Besides being of great help to medical officers in the main hospital he has organised proper psychological grouping of backward boys in Farm Colony A and has placed schooling, recreation and occupational therapy on a firm and progressive footing.

The four paragraphs enumerated above have not been separate and isolated factors in the hospital's progress, but have been confluent and synergistic.

The tutor-sister, the altering of the curriculum and the use of psychiatrically educative films on a 16-mm. projector have considerably stimulated nursing training and have made the nurses aware that psycho-therapy in nurse-patient relationship is paramount and that custodianship is of minimal importance.

A bigger establishment of medical officers allows more attention to individual patients, widens the scope of psycho-therapy, prevents the development of the institutionalised chronic and allows a sieving of present chronics for salvable material worthy of attempts at rehabilitation.

Relief of overcrowding in wards by greater number of discharges and by the transference of senile patients to country general hospitals annexes, will promote better ward classifications and this is furthered by having as visible encouraging goals convalescent and open wards for patients for either sex for their complete rehabilitation and their journey homeward.

The foregoing part of this report represents only a small part of the progressive activity of the hospital despite the space given to it. Many others, though extremely important, may be briefly itemised: extensive repair and painting work by local artisan labour and by Public Works Department have transformed many wards, some interiorly, some exteriorly and some both (female 6, 7, and 12 wards, male 5 and 6, recreation hall, farm ward, farm bailiff and assistant farm bailiff cottages may be mentioned); male full sized bowling green is in operation and the grandstand almost completed; the awning of the laundry veranda is very satisfactory and new machinery has been added; increased laundry staff and a 7 day working week not only provides adequate efficient local service, but help is given from time to time to Ipswich Mental Hospital; dietary and clothing of patients are constantly being improved; a high level large capacity water tank at Farm Colony augments water supply and pressure; all forms of sport and ward activities are proceeding at increased tempo and less and less patients may be seen sitting about doing nothing; the canteen has been improved by addition of a cold room; the fitters have a new work shop for repair of the hospital's fleet of motor vehicles and an old, though solid building, is considered suitable for conversion into housing the fleet; innumerable minor improvements have been made throughout the wards for patient's comfort, protection, nursing, recreation and occupation and the somewhat formidable list, still incomplete, may be drawn to a close.

A more formal epitome of hospital activities is as follows:—

(1) *Population.*—The average daily population has been 2,382, compared with 2,498 last year and 2,484 for the year preceding.

Total admissions were 1,047, of whom 254 were re-admissions.

Deaths totalled 258, and the average age at death was 70.

Of the admission 261 were deemed to be senile mental states and 91 were congenitally or otherwise mentally deficient.

Discharges totalled 705.

(2) *Treatment.*—No outstanding consistent results were obtained from a number of chemo-therapies which were given adequate trial; but there has been a maintenance of improved ward behaviour, habits, leaves and discharges.

Transfers of old patients to country general hospital annexes numbered 63 and the opening of Mount Lofty at Toowoomba has proved a worthy outlet for the old men.

(3) Staff.—Dr. Burton G. Burton-Bradley left on special leave for Commonwealth work in Malaya. Dr. W. Leggat secured his D.P.M. in England and after two years' absence rejoined the staff.

Dr. Nurcombe has been transferred from Toowoomba, and with Dr. Gooch, who joins us very shortly, is pursuing the first part of the D.P.M. locally. Dr. Burke continues in his studies with them. Dr. Potter, from England, decided upon private practice and left early in the year.

(4) *Visitors.*—A long list of representations of religious denominations and of charitable bodies again gave excellent service.

In conclusion, it may be confidently asserted that although very great progress has been made during the past few years, greater progress is well in sight and a new era has been successfully commenced.

Wacol Repatriation Pavilion.

This small portion of the mental hospital comprising three ward blocks, plus kitchen, cafeteria and canteen, provides for about 100 ex-servicemen patients.

Designed for returned ex-servicemen whose mental illnesses have been deemed by Repatriation authority to have been caused by conditions and experiences while on active service, the pavilion's population comprises about two-thirds of its residents under the primary category. There are about 40 other repatriation responsibility cases scattered in wards of the main hospital.

They are not at Wacol pavilion as their mental state, their conduct and behaviour, and their physical state is not compatible with the open types of wards nor with the freedom or facility of perambulation necessary to visit the cafeteria or canteen.

Though small, the pavilion unit is active, and the proportion of leaves, discharges and admissions is high.

They are well catered for recreationally and for entertainment, by having all hospital facilities available to them as well as their own special Repatriation amenities.

Red Cross brings gifts regularly, concert parties visit, pictures are held twice weekly and Digger organised sea-side bus trips and dinners regularly punctuate the yearly period.

A function of special significance has been the ceremony of Anzac Day. Begun only four or five years ago and organised by the Goodna Sub-branch of the R.S.L. a meagre handful of 20–30 has grown to upwards of 200 this year.

Padre Ware officiated, the Ipswich Town Band provided appropriate music with a bugle for the Last Post, Boy Scouts officiated with the flag, members of Goodna R.S.L. organised and many ex-servicemen, with a sprinkling of ex-servicewomen, friends and relatives, all combined made a most impressive sight and gave splendid evidence that the men of Anzac are not forgotten.

All modern psychiatric treatments apply to the pavilion as to the main hospital and separate units provide handicrafts and woodwork therapy.

The kitchen is well run and the standard of dietary consistently high, while the canteen has a large range of luxury class amenities.

Repatriation Department officials visit regularly and enquire closely into patients' clothing and monetary needs.

Physical, mental, and dental care is adequately supervised and from time to time visits transpire by officials from headquarters in in Melbourne.

TOOWOOMBA MENTAL HOSPITAL.

Medical Superintendent: J. H. B. Henderson, M.B., B.S. (Syd.).

It is pleasing to note at the end of this financial year that the alterations and additions involving ten of the male and female wards are proceeding to schedule, and it is hopefully anticipated that in a few months' time those on the male side will be ready for use. Much thought has been given by the various departmental officers to ensuring that the improvements will be of practical assistance in every respect, and I have no doubt that the result will be most satisfying both to patients and staff.

Other improvements have been effected in the sculleries of the Hospital Block, Ward 6 and Ward F, this work having been completed by our own artisans.

A large timber storage shed has also been constructed to harmonise with the surrounding buildings, and a smaller and much more colourful room for the occupational therapist. It is hoped that in the near future when the ward bathrooms are completed the existing common central bathroom will be able to be converted to a complete Occupational Therapy block.

The first occupational therapist was appointed early in the year and although somewhat restricted in her activities by limited space, has already proved to be a very efficient unit in our therapeutic armamentarium. Amongst other activities she has been chiefly responsible for re-introducing the annual fancy dress ball, and for bringing to fruition our first magazine which provides the patients with a cultural outlet and also forms a more tangible medium between the institution and the people outside.

Towards the middle of the year Dr. Barry Nurcombe was transferred to the Brisbane Mental Hospital for convenience in his D.P.M. course. Fortunately, Dr. D. A. Locke, who had previously helped us in a temporary capacity, was able once again to fill the breach.

Improved furnishings such as curtains, colourful quilts, rubber mattresses, panelyte topped tables, individual tea pots, etc., have been added to a number of the wards and these, together with brightly coloured linoleum, have transformed them from a rather sombre tone to one of cheerful brightness.

Large racks for storing utensils have been constructed for the kitchen, whilst a large foul linen washing machine is now being installed in the laundry. However, the latter place is very congested and indications are that redesigning will have to be carried out in the near future if it is to continue functioning as an efficient unit.

The number of female trainees has improved slightly, whilst some of our ex-qualified nurses have re-applied for temporary positions. Thus, though still somewhat low numerically, the female division now has a more experienced staff. Two of the charge nurses are at present on leave training for the General Nursing Certificate at the Toowoomba Hospital.

The patients are still very well provided with entertainment of many varieties and a quarter-size billiard table and a miniature billiard table have been added to the existing two full size tables.

A projector for coloured transparencies has been acquired to provide shows in addition to the 16-mm. movies in the wards.

Indoor bowls is another sport very popular with some of the patients and there are reciprocal contests between them and a club in town.

Apart from the regular institutional recreational facilities, outside bodies provide bands, fetes, mother's day parties, concerts, etc., not forgetting the very popular community concerts which are the result of the unselfish efforts of Mr. and Mrs. Ranger.

Other members of the Staff are to be thanked for their interest in the patients and for the many trips and different acts of kindness which are regularly being demonstrated.

Between working at the institution, the Home for Epileptics, the General Hospital, and responding to other calls from various departments, the psychologist is kept very busy.

We have maintained our liaison with the local A.A. Group whose members often give invaluable assistance to alcoholic patients.

I cannot stress too highly the invaluable assistance which the Education Department teacher at the Epileptic Home has given to certain of the defective children. She has an unenviable job instructing and training epileptic children, but she is always very tolerant, willing and devoted to her task, even to the extent of imperilling her own health.

Instructive films provided by various drug houses, and more recently by the Department, also are now shown quite regularly to members of the staff.

With the progressive discharge over the past few years of selected senile patients to various annexes established at certain general hospitals, there has been considerable change in the status of the majority of our wards.

The higher percentage of voluntary admissions at an early stage of their disease, and improvement in therapy with a resultant improvement in the discharge rate have also contributed to this change.

The result is that in these wards there are now considerably fewer able bodied patients in a reasonable state of mental health who are capable of assisting in ward work, or with the various ancillary departments outside.

The appointment of a tutor-sister to the Brisbane Mental Hospital is welcomed, as no doubt this Institution will later profit by this move.

IPSWICH MENTAL HOSPITAL.

Medical Superintendent: J. A. Hede, M.B., B.S., (Melb.).

During the past twelve months considerable progress has been made in the building programme at the Ipswich Mental Hospital.

The construction of the new female unit is ahead of schedule and its occupation is expected next year. This unit will accommodate approximately two hundred adult females, with a resultant increase of thirty per cent. in total population. With the completion of this building it is intended to extend the main kitchen, store and nurses' quarters and general laundry. A pavilion for patients in the female refractory ward is under construction and the foundations are being laid for a similar building in the male criminal ward. Plans are under preparation for extension to the male children's ward.

In the last year there has been an appreciable decrease in population in the adult wards, but the accommodation in male and female children's wards is still creating difficulties in administration and nursing spheres. The present trend would indicate the future necessity to take over one of the female adult wards for child accommodation.

Occupational therapy and recreational activities have made further progress, and patients' entertainments have been extended to include weekly card evenings for male and female patients in the recreation hall. Weekly films are shown in the main hall and in the criminal ward. A series of nursing training films is now shown at regular intervals for members of the nursing staff.

Staff shortage has been relieved somewhat, but the number of female applicants for training is still disappointing. A new dining room is included in extensions to the nurses' quarters and a separate change room is to be provided for non-resident nurses.

A new residence for the resident medical officer has been approved.

A bread slicing and buttering machine has been installed, thus improving the standard of meals and eliminating the necessity to cut and butter bread in the wards. The diet has been reviewed and a more varied menu is now provided, with suppers prepared in the main kitchen. This service has been instituted under the direction of the Supervising Cook, Brisbane Mental Hospital.

Tranquillising drugs continue to show a marked effect in conduct of the wards accommodating more disturbed patients.

The Courier-Mail Toy Fund once again donated gifts for our children at Christmas. In additon, Miss Hinton and party, the Red Cross and Country Women's Association provided regular entertainment for the patients.

The R.S.S.A.I.L.A. Sandy Gallop Sub-Branch have taken returned servicemen on bus trips and entertained them at dinner and theatre parties.

MOSMAN HALL—CHARTERS TOWERS.

Visiting Medical Officer: J. E. Robinson, M.B., B.S. (Q'ld.).

During the past year it was approved that the name of this hospital, previously "The Charters Towers Mental Hospital", be amended to "Mosman Hall." This amendment was gazetted on 29th May, 1958.

As this hospital continues to expand, so too does the interest of the people of the North. This interest, as will be seen in the subsequent paragraphs, is eminently beneficial to the patients.

Patients.

With the proposed opening of one new ward and general kitchen block in the early part of the financial year and the anticipated opening of a further new ward during the early part of 1959, it is envisaged that this hospital's patients population will be doubled before the compilation of the next annual report.

The daily average of patients resident during the year was 83, with 68 admissions, and 48 discharges. On the 8th May, 1958, the number of patients on the books reached the century.

The use of drugs known as "tranquillisers" is still being continued with marked advantage. The greatest benefit derived from these drugs appears to be improvement in behaviour and outlook with the ultimate result of ready cooperation of the patient.

A high standard of food is being maintained, and the attractively prepared and varied diet is worthy of comments received.

Quite a large variety of recreation and entertainment is available for participation by the patients. Sincere thanks are gratefully extended to the numerous convenors of concert parties who have provided entertainment at this hospital, and to sporting bodies such as the Vigoro, Basketball, and Cricket Associations who have conducted games within the hospital grounds. These sporting bodies, as well as the Rugby League Association, have cordially invited the patients to attend their games at all times, and weekly outings were arranged. Regular visits were made by the Red Cross and R.S.S.A.I.L.A. to distribute additional comforts to the patients.

With the weekly screening of films and other indoor recreation facilities—billiards, table tennis, wall quoits, etc., the contentment of patients is readily discernible. The third anniversary of the hospital was celebrated in September last with a dinner in the hospital at which a number of prominent townspeople were present.

Representatives of the various religious denominations tend to the patients' spiritual wants and regular services are held. Patients on parole are transported to Sunday morning church services.

Staff.

On 23rd April, 1958, this hospital was registered as a Training School for Mental Nurses and prospective trainee nurses have been most enthusiastic in their desire to study.

Lectures and demonstrations to prospective trainees have been conducted by the Visiting Medical Officer, Dr. J. E. Robinson, and Matron M. M. Burns of Eventide Home. It is intended to have the first year examination of trainees held in March, 1959.

Clinical meetings are arranged monthly between the visiting medical officer and trained staff to confer on progress and treatment of patients and discuss ward reports in general.

Buildings and Grounds.

To the present, this hospital has been functioning with two wards only, included in one being the temporary kitchen which has fulfilled all requirements. During the year two further wards for male patients and the general kitchen block have neared completion and construction on the convalescent ward for females was commenced. It is expected that one of the near completed wards and the general kitchen block will be put into operation in the early part of the coming finanical year, and the other during the early part of 1959.

The beautification scheme of the hospital grounds generally is expanding in step with the growth of the institution. A large recreation area fronting the general kitchen block is now in readiness for the planting of shade trees and lawns. The approach to the hospital has been industriously tended by the gardening staff and spontaneous appreciation from visitors is gratifying.

Supplies of citrus fruit from the orchard have been received and portion distributed to the Charters Towers General Hospital. A multipurpose spray was acquired during the year to facilitate the control and prevention of insect pests and disease in the orchard.

PSYCHIATRIC CLINIC.

Despite rather serious shortages in staffing occasioned by the unavoidable delays in filling vacancies, the number of new patients treated at the clinic increased by approximately 10 per cent. over those treated in the previous year. Over 60 more female patients were treated and these were chiefly psychoneurotics, psychotics and behaviour problems in immature persons. There has been a growing tendency for general practitioners to refer patients to the clinic. It is considered a possibility that the reason for this is the publicity won by the clinic through the Educational Programme as described in previous report and through the participation of Clinic Officers in various professional associations interested in social welfare work.

Patients on leave from mental hospitals are being encouraged to attend the clinic for renewal of leave and for supportive treatment. The success of this policy is shown in the doubling of numbers of such patients in attendance during the last year.

Once again student teaching and observation sessions have been an important part of the function of the clinic. Groups of Social Science students have attended throughout the year. A two-day visit by a group of School Health Service sisters on refresher course was deemed by the supervisors to have been especially interesting and valuable.

Visitors' Week has been deferred to a later date this year for the convenience of the various Departments and organisations wishing their students to attend. Arrangements have been completed and an attendance of approximately one hundred is expected for the four days of the programme.

Two of the research projects referred to in the previous report were completed, namely those on Huntington's chorea and a certain type of deaf mutism. Preliminary work has been done on two other researches, one on immaturity and the other on the familial picture in schizophrenia.

It is recorded with regret that Sister M. B. Jeffrey has been obliged to resign on account of illness. Sister Jeffrey has been with the clinic as welfare officer since its inception when it functioned in one room of the Taxation Building, and has seen it through the vicissitudes of its growth and development. Her work has been greatly appreciated by patients and staff. No patient had a problem too big or too little for Sister Jeffrey. She had a natural love for people and would always see they received the service their need required.

Resignations were received, with regret, from Dr. N. E. Parker who has entered private psychiatric practice, and from Miss M. Hadley who is now practising privately as a speech therapist. Miss J. Gill replaced Miss N. Grenning as female psychologist. Since Miss Gill has joined the staff it has been possible to include a certain amount of remedial teaching in the total therapy programme of children suffering from behaviour disorders with associated educational retardation. Such remedial teaching is offered only to cases where it is important to the therapy programme that attendance be confined to the clinic alone.

Three medical officers from the Brisbane Mental Hospital now attend the clinic once weekly. Dr. Mary Abrahams also joined the consulting staff and her contributions to the Child Guidance section are of considerable value.

PUBLICATIONS BY MEMBERS OF STAFF.

Parker, N.: "Two Essays in Medical Genetics"—

(1) "Observations on Huntington's Chorea";

(2) "Congenital Deafness due to a Sex-linked Recessive Gene."

(An entry for the Evan Jones Memorial Prize, 1957.)

Parker, N.: "Manic-Depressive Psychosis Following Head Injury."

EPILEPTIC HOME.

Superintendent: E. G. KENYON.

There was a total of 108 patients under treatment at the Home during the year, comprising 48 males and 60 females, 6 patients died—2 males and 4 females. Two females were discharged to the Toowoomba Mental Hospital.

A record of epileptic seizures is kept. Figures for the various groups during the year are as follows:—

	Males.	Females.
Grand Mal	1,505	1,431
Petit Mal	1,263	3,956
	2,768	5,387

Grand Total—8,155.

The home is ideally situated on the outskirts of the city of Toowoomba in a rural setting and climatic conditions are all that could be desired.

Epileptics can be most difficult people. They can recover quickly from a seizure or require constant attention and care. Some may suffer injury and exhibit violence. There are many difficulties and anxieties experienced with such a wide variety of mentality, age and physical disability in the patients. Those therefore, who have the responsibility and care of epileptics must possess the required temperament.

It was hoped that this home would be for those who would be able to carry on except for the physical handicaps associated with epilepsy. However, statistics show that the majority of patients remain in the home indefinitely.

Over the past five years many improvements have taken place in the home. The interior and outside of the building has been painted.

Bitumen paths have been laid down. An up-to-date washing machine has been installed in the laundry. Laminated plastic table tops have been provided in male and female dining rooms. Recently a steam pipe line from Toowoomba Mental Hospital was completed and now steam and hot water is provided from that source and this will also prove quite economical in labour saving and fuel. It is hoped that the heating of wards from this source will be undertaken in the near future. Improved fire fighting equipment has also been provided.

School.—The head teacher's report for June, 1958, shows that 35 pupils are enrolled—15 boys and 20 girls, including 9 children from the Toowoomba Mental Hospital. As ages range from 6 to approximately 20 years, the mental abilities, desires of expression and experiences vary considerably. These, coupled with permanent and/or intermittent emotional and physical disabilities present the problems to be handled.

Confidence in the teacher, contact with other children as a community, happiness in surroundings are gained slowly by allowing children to move, observe, and act apparently unnoticed until some topical interest is noted, which may then be fostered and developed. With sympathy, understanding and affection they reciprocate as they are best able and apply themselves with effort to the activities of the school or home. Writing produced by some pupils is very good. Correct speech with many is a problem. One pupil is worthy of special mention. She developed from a maladjusted child to a co-operative, helpful and observant child, confident and alert to her newly discovered potentials.

It is satisfactory to note how many children become happy participants in simple games.

As the majority of these children will remain residents of the home for the greater part of their lives training in simple hygiene, interest in limited opportunities, and compatability towards their fellow inmates must be a major aim in their therapeutic care.

Supplies of farm produce continue to meet demands and the employment of patient labour on the farm is an important function of the home, and patients so employed eagerly look forward to their daily tasks.

During the year bus outings to various parts of the Downs were much enjoyed. Many patients appreciated visits to the city of Toowoomba. Weekly dances and pictures help to brighten the lives of patients, while band concerts by the Salvation Army Band and a variety of concerts were much appreciated.

Religious services were held by various denominations every Sunday.

TABLE LXXIII.

QUEENSLAND MENTAL HOSPITALS.

Showing Admissions, Readmissions, Discharges and Deaths, during the Year ended 30th June, 1958.

—	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Mosman Hall, Charters Towers.	Totals.		
	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Males.	Females.	Totals.
On the Books of the Hospitals on 1st July, 1957	**1,374**	**1,238**	**2,612**	**625**	**627**	**1,252**	**388**	**210**	**598**	**82**	**2,469**	**2,075**	**4,544**
Admitted for the first time	413	380	793	79	81	160	31	29	60	58	581	490	1,071
Readmitted	103	151	254	26	42	68	9	4	13	10	148	197	345
Totals All Hospitals	**1,890**	**1,769**	**3,659**	**730**	**750**	**1,480**	**428**	**243**	**671**	**150**	**3,198**	**2,762**	**5,960**
Transferred from Brisbane	..	..	..	17	62	79	7	1	8	1	25	63	88
Transferred from Toowoomba	1	5	6	..	..	..	..	..	..	..	1	5	6
Transferred from Ipswich	19	..	19	..	..	..	..	..	..	..	19	..	19
Transferred from Mosman Hall	2	..	2	..	..	..	..	..	..	..	2	..	2
***Total number under care during the year**	**1,912**	**1,774**	**3,686**	**747**	**812**	**1,559**	**435**	**244**	**679**	**151**	**3,245**	**2,830**	**6,075**
†Discharged—													
Recovered	172	264	436	39	67	106	13	1	14	40	264	332	596
Relieved	78	71	149	13	19	32	17	15	32	1	109	105	214
Not Improved	19	2	21	36	90	126	3	7	10	3	61	99	160
Voluntarily left	60	39	99	15	8	23	5	3	8	4	84	50	134
Died	140	118	258	42	36	78	12	2	14	4	198	156	354
Total Number Discharged and Died	**469**	**494**	**963**	**145**	**220**	**365**	**50**	**28**	**78**	**52**	**716**	**742**	**1,458**
Transferred to Brisbane	..	..	..	1	5	6	19	..	19	2	22	5	27
Transferred to Toowoomba	17	62	79	..	..	..	..	..	..	..	17	62	79
Transferred to Ipswich	7	1	8	..	..	..	..	..	..	..	7	1	8
Transferred to Mosman Hall	1	..	1	..	..	..	..	..	..	..	1	..	1
Total number discharged, died, &c., during year	494	557	1,051	146	225	371	69	28	97	54	763	810	1,573
Remaining on Books of Hospitals on 30th June, 1958	**1,418**	**1,217**	**2,635**	**601**	**587**	**1,188**	**366**	**216**	**582**	**97**	**2,482**	**2,020**	**4,502**
Average Number Daily Resident	**1,301**	**1,081**	**2,382**	**610**	**580**	**1,190**	**368**	**204**	**572**	**83**	**2,362**	**1,865**	**4,227**
Number on leave of absence on 30th June, 1958	90	118	208	13	33	46	6	4	10	4	113	155	268
Proportion of Mentally Sick to each 1,000 of population as at 30th June, 1958	..	..	..	..	..	..	..	..	..	..	3·41	2·92	3·17
Proportion of Admissions per 10,000 of population for year ended 30th June, 1958	..	..	..	..	..	..	..	..	..	..	10·02	9·93	9·98

* These totals include interhospital transfers.

† Includes Section 49 Discharges as shown—

Recovered	5	..	5	2	6	8	..	..	..	..	7	6	13
Relieved	11	34	45	2	1	3	..	..	..	..	13	35	48
Not Improved	2	..	2	2	1	3	..	..	..	1	5	1	6
	18	34	52	6	8	14	..	..	..	1	25	42	67

TABLE LXXIV.

Admissions, Discharges, and Deaths, with the Proportions of Recoveries and Deaths per cent. during the Year ended 30th June, 1958.

—	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Mosman Hall, Charters Towers.	Totals.		
	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Males.	Females.	Totals.
Total Admissions ..	516	531	1,047	105	123	228	40	33	73	68	729	687	1,416
*Discharged—													
Recovered ..	197	303	500	48	72	120	13	1	14	41	299	376	675
Relieved ..	112	71	183	14	20	34	20	17	37	4	150	108	258
Not Improved ..	20	2	22	41	92	133	5	8	13	3	69	102	171
Died	140	118	258	42	36	78	12	2	14	4	198	156	354
Average Number Daily Residents ..	1,301	1,081	2,382	610	580	1,190	368	204	572	83	2.362	1,865	4,227
Percentage of Recoveries on Admissions ..	38·12	57·06	47·75	45·71	58·54	52·63	32·50	3·03	19·17	60·30	41·01	54·73	47·74
Percentage of Patients Relieved on Admissions	21·71	13·37	17·47	13·33	16·26	14·91	50	51·51	50·61	5·90	20·57	15·72	18·22
Percentage of Deaths on Average Number Resident	10·76	10·92	10·83	6·88	6·21	6·55	3·26	·98	2·44	4·81	8·38	8·36	8·37

* For the purposes of this table patients discharged under Section 49 (3) and Voluntarily Left have been classified under these headings.

TABLE LXXV.

Forms of Mental Disorders in Patients Admitted during the Twelve Months ended 30th June, 1958.

—	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Mosman Hall, Charters Towers.	Totals.		
	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Males.	Females.	Totals.
1. AFFECTIVE REACTION TYPES—													
(*a*) Manic Depressive Psychosis	18	55	73	..	..	..	..	..	..	1	19	55	74
(*b*) Mania	..	..	..	3	2	5	..	..	..	1	4	2	6
(*c*) Depression	7	7	14	13	22	35	..	..	..	8	28	29	57
Reactive Depression ..	7	9	16	1	1	2	..	..	..	..	8	10	18
Recurrent Depression ..	3	1	4	..	..	..	..	..	..	..	3	1	4
Hypomania	3	2	5	..	1	1	..	..	..	..	3	3	6
(*d*) Involution Depression ..	5	18	23	..	5	5	..	..	..	..	5	23	28
Cyclothymic Personality	..	..	..	..	..	..	..	..	..	..	..	..	..
Involution Melancholia ..	..	13	13	..	..	..	..	..	..	..	..	13	13
2. SCHIZOPHRENIC REACTION TYPES—													
(*a*) Schizoid Personality ..	1	1	2	1	1	2	..	..	..	..	2	2	4
Schizophrenia	151	135	286	23	15	38	5	..	5	12	191	150	341
Hebephrenia	..	2	2	..	..	..	..	..	..	..	..	2	2
(*b*) Paraphrenia	17	25	42	2	1	3	1	..	1	2	22	26	48
Catatonia	..	..	..	..	..	..	..	..	..	1	1	..	1
(*c*) Paranoid Reaction ..	15	7	22	..	10	10	..	..	..	3	18	17	35
3. ORGANIC REACTION TYPES—													
(*a*) Organic Dementia ..	2	..	2	..	..	..	..	..	..	1	3	..	3
Organic Psychosis ..	8	1	9	1	..	1	..	..	..	..	9	1	10
Hydrocephalus	..	..	..	..	..	..	1	..	1	..	1	..	1
Huntington's Chorea ..	..	1	1	..	..	..	..	..	..	..	..	1	1
Kernicterus	..	..	..	..	..	..	..	..	..	..	..	..	..
Cerebral Atrophy ..	..	1	1	..	..	..	..	..	..	..	..	1	1
(*b*) Toxins—													
Acute Toxic Psychosis ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Acute Alcoholism	..	..	..	1	1	2	..	..	..	..	1	1	2
Alcoholic Hallucinosis ..	6	..	6	2	..	2	..	..	..	4	12	..	12
Alcoholic Psychosis ..	1	3	4	..	..	..	..	..	..	4	5	3	8
Alcoholic Psychosis (Korsakov's)	6	..	6	..	1	1	..	..	..	3	9	1	10
Cerebral Syphilis	..	1	1	..	..	..	..	..	..	..	..	1	1
Alcoholism	..	10	10	..	..	..	..	..	..	..	..	10	10
Acute Confusional Psychosis	2	..	2	..	1	1	..	..	..	..	2	1	3
(*c*) Arteriosclerotic Dementia	8	7	15	1	1	2	..	..	..	1	10	8	18
Arteriosclerotic Psychosis ..	9	11	20	4	1	5	..	..	..	1	14	12	26
Presenile Dementia ..	2	5	7	..	3	3	..	..	..	..	2	8	10
Presenile Psychosis ..	..	1	1	..	..	..	..	..	..	..	..	1	1
Senile Dementia	68	82	150	4	4	8	..	..	..	2	74	86	160
Senile Psychosis	41	35	76	6	6	12	..	..	..	..	47	41	88
Senility	..	4	4	..	..	..	..	..	..	..	..	4	4
Senile Depressive	..	1	1	..	..	..	..	..	..	..	..	1	1
4. EPILEPTIC REACTION TYPES—													
Epileptic Psychosis ..	5	2	7	3	4	7	..	..	..	2	10	6	16
Epilepsy	11	5	16	..	..	..	..	..	..	..	11	5	16
5. PSYCHONEUROTIC REACTION TYPES—													
Psychoneurosis	8	14	22	..	..	..	..	..	..	1	9	14	23
Anxiety State	12	15	27	7	13	20	..	..	..	..	19	28	47
Hysteria	3	2	5	2	4	6	..	..	..	1	6	6	12
Obsessive	1	..	1	..	..	..	..	..	..	..	1	..	1
Neurasthenia	..	..	..	..	..	..	..	..	..	..	..	..	..
Depression	..	..	..	3	10	13	..	..	..	..	3	10	13
6. MENTAL DEFICIENCY—													
(*a*) Mental Deficiency ..	34	36	70	..	..	..	..	..	..	6	40	36	76
With Epilepsy	6	..	6	1	2	3	2	5	7	..	9	7	16
Moron	..	..	..	1	3	4	..	..	..	..	1	3	4
Mongol	2	2	4	2	1	3	11	5	16	..	15	8	23
With Schizophrenia ..	3	3	6	..	..	..	..	..	..	..	3	3	6
(*b*) Idiocy	1	..	1	1	2	3	15	11	26	..	17	13	30
(*c*) Postencephalitic Idiocy ..	..	..	..	..	..	..	..	3	3	..	..	3	3
(*d*) Microcephalic Idiocy ..	..	..	..	..	..	..	2	1	3	..	2	1	3
(*e*) Imbecility	2	2	4	5	4	9	3	6	9	..	10	12	22
Rachischisis	..	..	..	..	..	..	..	2	2	..	..	2	2
7. ADDICTION—													
Chronic Alcoholism ..	30	5	35	15	4	19	..	..	..	6	51	9	60
Drug	..	1	1	..	..	..	..	..	..	..	..	1	1
8. PSYCHOPATHIC PERSONALITY	15	6	21	1	..	1	..	..	..	6	22	6	28
9. TRAUMATIC PSYCHOSIS ..	3	..	3	2	..	2	..	..	..	2	7	..	7
10. Undiagnosed—	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	516	531	1,047	105	123	228	40	33	73	68	729	687	1,416

TABLE LXXVI.

Causes of Deaths which occurred during period ended 30th June, 1958.

—	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Mosman Hall, Charters Towers.	Totals.		
	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Males.	Females.	Totals.
General Diseases—													
Septicaemia	1	..	1	..	..	..	..	..	..	..	1	..	1
Carcinoma of Face	..	..	..	..	..	..	..	..	..	..	..	..	..
Toxaemia	..	1	1	..	1	1	..	..	..	1	1	2	3
Carcinoma of Pharynx	1	..	1	..	..	..	..	..	..	..	1	..	1
Cirrhosis of Liver	..	..	..	..	..	..	..	..	..	..	..	..	..
Diabetites Mellitus	..	1	1	..	..	..	..	..	..	..	..	1	1
Chronic Lymphatic Leukaemia	..	..	..	..	..	..	..	..	..	..	..	..	..
Asphyxiation	..	1	1	..	..	..	..	..	..	..	..	1	1
Manic Depressive Psychosis	..	..	..	..	..	..	..	..	..	..	..	..	..
Chronic Interstital Pneumonia	..	..	..	..	..	..	..	..	..	..	..	..	..
Ulcer Decubitis	..	..	..	1	..	1	..	..	..	..	1	..	1
Lyphosarcoma	1	..	1	..	..	..	..	..	..	..	1	..	1
Schizophrenic Deterioration	1	..	1	..	..	..	..	..	..	..	1	..	1
Diseases of the Nervous System—													
Cerebral Degeneration	5	9	14	2	..	2	..	..	..	..	7	9	16
Cerebral Thrombosis	7	4	11	1	2	3	..	..	..	..	8	6	14
Cerebral Haemorrhage	..	3	3	..	2	2	..	..	..	..	..	5	5
Cerebral Arteriosclerosis	4	2	6	..	..	..	..	..	..	..	4	2	6
Sub Dural Haemorrhage	1	..	1	..	..	..	..	..	..	..	1	..	1
Hydrocephalus	..	..	..	..	..	..	..	..	..	..	..	..	..
Status Epilepticus	1	1	2	..	1	1	..	..	..	..	1	2	3
Huntington's Chorea	..	..	..	..	..	..	..	..	..	..	..	..	..
Subarachnoid Haemorrhage	..	..	..	1	..	1	..	..	..	..	1	..	1
Cerebral Metasus	..	1	1	..	..	..	..	..	..	..	..	1	1
Intercranial Haemorrhage	1	..	1	..	..	..	..	..	..	..	1	..	1
Cerebral Trauma	1	..	1	..	..	..	..	..	..	..	1	..	1
Diseases of the Circulatory System—													
Cardio Vascular Degeneration	60	28	88	4	9	13	..	..	..	..	64	37	101
Coronary Occlusion	13	9	22	7	5	12	3	..	3	..	23	14	37
Acute Myocarditis	..	..	..	2	..	2	..	..	..	..	2	..	2
Myocardial Degeneration	5	3	8	2	..	2	2	..	2	..	9	3	12
Coronary Thrombosis	1	2	3	..	..	..	..	..	..	..	1	2	3
Toxicmyocarditis	..	..	..	..	..	..	..	..	..	1	1	..	1
Myocardial Infarction	2	1	3	..	..	..	..	..	..	..	2	1	3
Auricular Fibrillation	2	8	10	..	1	1	..	..	..	..	2	9	11
Aortic Thrombosis	..	..	..	..	..	..	..	..	..	..	..	..	..
Congestive Cardiac Failure	6	11	17	..	..	..	1	..	1	..	7	11	18
Left Ventricular Failure	1	..	1	1	1	2	..	..	..	..	2	1	3
Cardiac Failure	..	..	..	1	..	1	..	..	..	..	1	..	1
Congenital Cardiac Failure	..	..	..	1	..	1	..	..	..	..	1	..	1
Myocardial Insufficiency	1	..	1	..	..	..	..	..	..	..	1	..	1
Rheumatic Heart Disease	1	..	1	..	..	..	..	..	..	..	1	..	1
Diseases of the Respiratory System—													
Broncho Pneumonia	10	11	21	6	10	16	4	..	4	..	20	21	41
Lobar Pneumonia	1	..	1	2	..	2	..	..	..	..	3	..	3
Pulmonary Thrombosis	..	..	..	1	..	1	..	..	..	..	1	..	1
Terminal Pneumonia	..	4	4	..	..	..	..	..	..	..	..	4	4
Pneumonia	2	8	10	..	..	..	..	..	..	..	2	8	10
Cardiac Asthma	1	3	4	..	..	..	..	..	..	..	1	3	4
Pulmonary Tuberculosis	4	2	6	1	..	1	..	1	1	..	5	3	8
Carcinoma of Lung	..	..	..	..	..	..	1	..	1	..	1	..	1
Lung Abscess	..	..	..	..	..	..	..	..	..	..	..	..	..
Empysema	..	..	..	..	..	..	..	..	..	..	..	..	..
Hypostitic Pneumonia	..	..	..	4	..	4	..	..	..	1	5	..	5
Status Asthmaticus	..	..	..	..	..	..	..	1	1	..	..	1	1
Pulmonary Embolism	1	..	1	..	1	1	..	..	..	..	1	1	2
Diseases of the Alimentary System—													
Gastro Enteritis	..	2	2	..	..	..	..	..	..	..	..	2	2
Carcinoma of Rectum	1	..	1	1	1	2	..	..	..	..	2	1	3
Carcinoma of Liver	1	..	1	..	1	1	..	..	..	..	1	1	2
Intestinal Perforation	..	1	1	..	..	..	..	..	..	..	..	1	1
Ruptured Liver	1	..	1	..	..	..	..	..	..	..	1	..	1
Gastrointestinal Haemorrhage	..	..	..	..	..	..	..	..	..	..	..	..	..
Carcinoma of Colon	..	1	1	..	..	..	..	..	..	..	..	1	1
Carcinoma of Stomach	..	..	..	1	..	1	1	..	1	..	2	..	2
Congenital Liver Deficiency	..	..	..	1	..	1	..	..	..	..	1	..	1
Peritonitis	1	..	1	1	..	1	..	..	..	..	2	..	2
Peptic Ulcer	1	..	1	..	..	..	..	..	..	..	1	..	1
Diseases of the Genito-Urinary System—													
Uraemia due to Chronic Nephritis	..	..	..	1	..	1	..	..	..	1	2	..	2
Chronic Nephritis	..	..	..	..	..	..	..	..	..	..	..	..	..
Carcinoma of Cervix Uteri	..	..	..	..	..	..	..	..	..	..	..	..	..
Granulosa-cell Tumor of Ovary	..	..	..	..	..	..	..	..	..	..	..	..	..
Carcinoma of Urinary Bladder	..	..	..	..	1	1	..	..	..	..	..	1	1
Acute Pylo Nephritis	..	1	1	..	..	..	..	..	..	..	..	1	1
Totals	140	118	258	42	36	78	12	2	14	4	198	156	354

TABLE LXXVII.

Bodily Health and Condition of Patients Admitted during the Year ended 30th June, 1958.

—	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Mosman Hall. Charters Towers.	Totals.		
	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Males.	Fe-males.	Totals.
In apparently good health and condition	274	266	540	58	80	138	29	23	52	40	401	369	770
In indifferent health and reduced condition	168	185	353	32	26	58	11	8	19	26	237	219	456
In bad health and exhausted condition..	74	80	154	15	17	32	..	2	2	2	91	99	190
Totals ..	516	531	1,047	105	123	228	40	33	73	68	729	687	1,416

TABLE LXXVIII.

Birth Places of Patients Admitted During Period ended 30th June, 1958.

—	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Mcsman Hall. Charters Towers.	Totals.		
	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Males.	Fe-males.	Totals.
Queensland	303	340	643	77	91	168	24	26	50	33	437	457	894
New South Wales ..	58	44	102	13	16	29	4	1	5	3	78	61	139
Victoria	23	15	38	1	3	4	..	..	..	6	30	18	48
South Australia ..	3	4	7	..	1	1	..	..	..	..	3	5	8
Western Australia ..	1	3	4	..	..	..	..	..	..	..	1	3	4
Tasmania	5	3	8	..	1	1	..	..	..	2	7	4	11
New Zealand.. ..	2	4	6	..	..	..	..	..	..	1	3	4	7
England	34	46	80	4	4	8	..	..	..	5	43	50	93
Scotland	11	10	21	1	2	3	..	..	..	4	16	12	28
Ireland	7	10	17	1	1	2	..	..	..	3	11	11	22
Wales	1	1	2	..	..	..	..	..	..	..	1	1	2
India	3	..	3	..	..	..	..	..	..	..	3	..	3
Latvia	..	2	2	..	..	..	..	..	..	..	..	2	2
Rumania	..	2	2	..	..	..	..	..	..	..	..	2	2
Germany	3	3	6	1	..	1	..	..	..	..	4	3	7
Sweden	2	..	2	..	..	..	..	..	..	..	2	..	2
Italy	10	7	17	1	..	1	..	..	..	4	15	7	22
Holland	2	2	4	..	..	..	..	..	..	..	2	2	4
Poland	4	2	6	..	..	..	..	..	..	1	5	2	7
Burma	..	1	1	..	..	..	..	..	..	..	..	1	1
Russia	2	5	7	..	1	1	..	..	..	..	2	6	8
Hungary	3	..	3	..	..	..	..	..	..	..	3	..	3
Czechoslovakia ..	4	..	4	1	..	1	1	..	1	..	6	..	6
United States of America	1	..	1	..	..	..	..	..	..	..	1	..	1
Cyprus	..	..	..	..	..	..	..	..	..	1	1	..	1
Greece	3	1	4	..	1	1	..	..	..	..	3	2	5
Ukraine	4	1	5	..	..	..	..	..	..	..	4	1	5
France	1	..	1	..	..	..	..	..	..	..	1	..	1
Albania	1	..	1	..	..	..	..	..	..	..	1	..	1
Austria	..	..	..	..	1	1	..	..	..	..	..	1	1
Java	..	1	1	..	..	..	..	..	..	..	..	1	1
Yugoslavia ..	4	..	4	..	..	..	..	..	..	1	5	..	5
Malta	1	1	2	..	..	..	..	..	..	..	1	1	2
Bulgaria	1	..	1	..	..	..	..	..	..	..	1	..	1
Switzerland	..	..	..	..	..	..	..	..	..	1	1	..	1
Philippines	..	1	1	..	..	..	..	..	..	..	..	1	1
Canada	3	..	3	..	..	..	..	..	..	2	5	..	5
Malaya	1	..	1	..	..	..	..	..	..	1	2	..	2
Unknown	15	22	37	5	1	6	11	6	17	..	31	29	60
Totals ..	516	531	1,047	105	123	228	40	33	73	68	729	687	1,416

TABLE LXXIX.

Districts whence Patients were Received during the Year ended 30th June, 1958.

—	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Mosman Hall, Charters Towers.	Totals.		
	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Males.	Fe-males.	Totals.
Northern and North-Western	28	28	56	..	1	1	1	4	5	68	97	33	130
Central	15	19	34	4	3	7	2	3	5	..	21	25	46
Southern and South-Western	473	484	957	101	119	220	37	26	63	..	611	629	1,240
Totals ..	516	531	1,047	105	123	228	40	33	73	68	729	687	1,416

TABLE LXXX.

General Classification of Occupations of Patients Admitted during the Year ended 30th June, 1958.

Occupations.	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Mosman Hall, Charters Towers.	Totals.		
	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Males.	Fe-males.	Totals.
Rural Industries ..	45	1	46	15	1	16	..	..	..	8	68	2	70
Secondary Industries, Trades, &c.—													
Building Construction ..	31	..	31	6	..	6	..	..	..	8	45	..	45
Machinery and Electrical ..	24	..	24	7	..	7	..	..	..	..	31	..	31
Foodstuffs, Meat, &c.	16	1	17	4	..	4	..	..	..	6	26	1	27
Clothing, Retail, &c.	17	25	42	..	1	1	..	..	..	1	18	26	44
Mining	2	..	2	..	..	..	..	..	..	..	2	..	2
Transport	44	..	44	5	..	5	1	..	1	2	52	..	52
Clerical	20	15	35	2	1	3	..	..	..	2	24	16	40
Domestic Employment	..	313	313	..	86	86	..	..	..	..	..	399	399
Private Employment	8	1	9	4	..	4	..	..	..	2	14	1	15
Miscellaneous Employment ..	124	12	136	31	3	34	3	..	3	30	188	15	203
No Occupation, and Pensioners ..	155	141	296	21	24	45	1	..	1	9	186	165	351
Professions	21	19	40	3	5	8	..	..	..	..	24	24	48
Children	9	3	12	7	2	9	35	33	68	..	51	38	89
Totals ..	516	531	1,047	105	123	228	40	33	73	68	729	687	1,416

TABLE LXXXI.

Age Groups of Patients whose Admissions, Discharges, or Deaths Occurred during the Year, and those who Remained in the Hospital on 30th June, 1958.

Age Group.	Admissions.			* Discharges.						Deaths.			Remaining.		
				Recovered.			Relieved and not Improved.								
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Brisbane Mental Hospital.															
Under 5 years	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
5 years and under 10 years	2	. .	2	. .	. .	. .	1	. .	1	. .	. .	. .	12	. .	12
10 years and under 15 years	9	5	14	. .	. .	. .	3	. .	3	. .	. .	. .	24	9	33
15 years and under 20 years	31	21	52	12	14	26	11	2	13	1	. .	1	51	24	75
20 years and under 30 years	85	60	145	39	55	94	28	13	41	1	1	2	153	82	235
30 years and under 40 years	100	80	180	60	68	128	30	21	51	4	4	8	260	216	476
40 years and under 50 years	74	108	182	47	71	118	23	13	36	7	7	14	286	263	549
50 years and under 60 years	62	63	125	27	55	82	13	6	19	16	6	22	275	272	547
60 years and under 70 years	46	77	123	11	25	37	8	9	17	29	17	46	205	183	388
70 years and under 80 years	64	61	125	1	13	14	11	5	16	50	37	87	109	106	215
80 years and under 90 years	39	47	86	. .	1	1	3	4	7	28	41	69	40	54	94
90 years and over	4	9	13	. .	. .	. .	1	. .	1	3	5	8	2	8	10
Unknown	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	1
Totals, Brisbane Mental Hospital	**516**	**531**	**1,047**	**197**	**303**	**500**	**132**	**73**	**205**	**140**	**118**	**258**	**1,418**	**1,217**	**2,635**
Toowoomba Mental Hospital.															
Under 5 years	1	. .	1	. .	. .	. .	1	. .	1	. .	. .	. .	1	2	3
5 years and under 10 years	4	. .	4	. .	. .	. .	1	. .	1	. .	. .	. .	7	4	11
10 years and under 15 years	2	1	3	. .	1	1	. .	2	2	1	. .	1	10	8	18
15 years and under 20 years	5	3	8	. .	1	1	5	3	8	. .	. .	. .	16	12	28
20 years and under 30 years	11	18	29	9	11	20	8	4	12	2	. .	2	33	45	78
30 years and under 40 years	24	31	55	13	19	32	3	4	7	. .	1	1	75	60	135
40 years and under 50 years	20	19	39	16	17	33	4	9	13	3	2	5	120	112	232
50 years and under 60 years	16	22	38	8	11	19	11	12	23	7	7	14	135	155	290
60 years and under 70 years	11	16	27	1	10	11	7	41	48	9	11	20	113	116	229
70 years and under 80 years	6	9	15	. .	2	2	8	31	39	12	8	20	64	58	122
80 years and under 90 years	5	3	8	1	. .	1	7	6	13	8	6	14	21	10	31
90 years and over	. .	1	1	. .	. .	. .	. .	. .	. .	. .	1	1	1	1	2
Unknown	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	5	4	9
Totals, Toowoomba Mental Hospital . .	**105**	**123**	**228**	**48**	**72**	**120**	**55**	**112**	**167**	**42**	**36**	**78**	**601**	**587**	**1,188**
Ipswich Mental Hospital.															
Under 5 years	21	21	42	. .	. .	. .	18	23	41	3	. .	3	17	18	35
5 years and under 10 years	9	10	19	. .	. .	. .	6	. .	6	. .	. .	. .	32	40	72
10 years and under 15 years	4	2	6	. .	1	1	. .	. .	. .	. .	. .	. .	28	28	56
15 years and under 20 years	1	. .	1	1	. .	1	. .	1	1	. .	. .	. .	30	19	49
20 years and under 30 years	2	. .	2	1	. .	1	1	. .	1	. .	. .	. .	23	29	52
30 years and under 40 years	1	. .	1	4	. .	4	. .	. .	. .	. .	1	1	20	7	27
40 years and under 50 years	1	. .	1	4	. .	4	. .	. .	. .	. .	1	1	41	18	59
50 years and under 60 years	1	. .	1	3	. .	3	. .	1	1	1	. .	1	54	30	84
60 years and under 70 years	. .	. .	. .	. .	. .	. .	. .	. .	. .	2	. .	2	75	14	89
70 years and under 80 years	. .	. .	. .	. .	. .	. .	. .	. .	. .	4	. .	4	35	10	45
80 years and under 90 years	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	1	11	3	14
90 years and over	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	1	. .	. .	. .
Unknown	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Totals, Ipswich Mental Hospital	**40**	**33**	**73**	**13**	**1**	**14**	**25**	**25**	**50**	**12**	**2**	**14**	**366**	**216**	**582**
Mosman Hall.															
Under 5 years	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	
5 years and under 10 years	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
10 years and under 15 years	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	1
15 years and under 20 years	3	. .	3	. .	. .	. .	. .	. .	. .	2	. .	2	3	. .	3
20 years and under 30 years	9	. .	9	9	. .	9	. .	. .	. .	. .	. .	. .	12	. .	12
30 years and under 40 years	10	. .	10	10	. .	10	1	. .	1	. .	. .	. .	16	. .	16
40 years and under 50 years	19	. .	19	12	. .	12	4	. .	4	. .	. .	. .	18	. .	18
50 years and under 60 years	21	. .	21	6	. .	6	2	. .	2	1	. .	1	17	. .	17
60 years and under 70 years	3	. .	3	3	. .	3	. .	. .	. .	. .	. .	. .	16	. .	16
70 years and under 80 years	2	. .	2	1	. .	1	. .	. .	. .	1	. .	1	11	. .	11
80 years and under 90 years	1	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	3	. .	3
90 years and over	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Unknown	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Totals, Mosman Hall, Charters Towers . .	**68**	. .	**68**	**41**	. .	**41**	**7**	. .	**7**	**4**	. .	**4**	**97**	. .	**97**
Grand Totals, All Hospitals	729	687	1,416	299	376	675	219	210	429	198	156	354	2,482	2,020	4,502

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*For the purposes of this table patients discharged under Section 49 (3) and Voluntarily Left have been classified under these headings.

TABLE LXXXII.

MARITAL STATUS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND OF PATIENTS WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1958.

Marital Status.	Admissions.			*Discharges.						Deaths.			Remaining.		
				Recovered.			Relieved and not Improved.								
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
BRISBANE MENTAL HOSPITAL.															
Single	272	183	455	114	85	199	78	15	93	46	31	77	1,055	575	1,630
Married	185	211	396	75	179	254	40	44	84	63	30	93	290	435	725
Widowed	50	112	162	6	29	35	8	12	20	27	56	83	52	181	233
Divorced	8	8	16	1	6	7	5	2	7	4	..	4	9	20	29
Unknown	1	17	18	1	4	5	1	..	1	..	1	1	12	6	18
Totals, Brisbane Mental Hospital	**516**	**531**	**1047**	**197**	**303**	**500**	**132**	**73**	**205**	**140**	**118**	**258**	**1,418**	**1,217**	**2,635**
TOOWOOMBA MENTAL HOSPITAL.															
Single	48	32	80	26	12	38	33	33	66	29	15	44	513	332	845
Married	44	75	119	19	49	68	16	52	68	9	15	24	59	195	254
Widowed	8	11	19	1	6	7	2	23	25	3	6	9	13	42	55
Divorced	4	4	8	2	5	7	2	3	5	..	..	..	4	14	18
Unknown	1	1	2	..	..	..	2	1	3	1	..	1	12	4	16
Totals, Toowoomba Mental Hospital	**105**	**123**	**228**	**48**	**72**	**120**	**55**	**112**	**167**	**42**	**36**	**78**	**601**	**587**	**1,188**
IPSWICH MENTAL HOSPITAL.															
Single	39	33	72	9	1	10	25	24	49	8	2	10	307	175	482
Married	..	..	..	3	..	3	..	1	1	4	..	4	37	26	63
Widowed	..	..	..	1	..	1	..	..	..	..	..	..	6	5	11
Divorced	1	..	1	..	..	..	..	..	..	..	..	..	4	9	13
Unknown	..	..	..	..	..	..	..	..	..	..	..	..	12	1	13
Totals, Ipswich Mental Hospital	**40**	**33**	**73**	**13**	**1**	**14**	**25**	**25**	**50**	**12**	**2**	**14**	**366**	**216**	**582**
MOSMAN HALL.															
Single	46	..	46	23	..	23	3	..	3	3	..	3	75	..	75
Married	18	..	18	14	..	14	4	..	4	1	..	1	16	..	16
Widowed	..	..	..	..	..	..	..	..	..	..	..	..	6	..	6
Divorced	3	..	3	3	..	3	..	..	..	..	..	..	..	..	..
Unknown	1	..	1	1	..	1	..	..	..	..	..	..	..	..	..
Totals, Mosman Hall, Charters Towers	**68**	..	**68**	**41**	..	**41**	**7**	..	**7**	**4**	..	**4**	**97**	..	**97**
Grand Totals, all Hospitals ..	**729**	**687**	**1,416**	**299**	**376**	**675**	**219**	**210**	**429**	**198**	**156**	**354**	**2,482**	**2,020**	**4,502**

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* For the purposes of this table patients discharged under Section 49 (3) and Voluntarily Left have been classified under these headings.

TABLE LXXXIII.

LENGTH OF RESIDENCE IN THE HOSPITAL OF THE PATIENTS WHO WERE DISCHARGED OR WHO DIED DURING THE YEAR AND OF THOSE WHO REMAINED ON THE BOOKS OF THE HOSPITAL ON 30TH JUNE, 1958.

—	*Discharges.						Deaths.			Remaining.		
	Recovered.			Relieved and not Improved.								
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
BRISBANE MENTAL HOSPITAL.												
Under 1 month	18	17	35	25	7	32	38	23	61	28	50	78
1 month and under 3 months	69	105	174	28	19	47	20	22	42	65	80	145
3 months and under 6 months	50	77	127	27	21	48	17	16	33	73	62	135
6 months and under 9 months	21	39	60	13	10	23	8	6	14	64	66	130
9 months and under 12 months	15	15	30	6	6	12	6	3	9	53	36	89
1 year and under 2 years	9	24	33	16	5	21	10	12	22	120	151	271
2 years and under 3 years	4	9	13	5	1	6	6	2	8	105	73	178
3 years and under 5 years	7	6	13	6	..	6	7	11	18	167	112	279
5 years and under 7 years	1	4	5	1	..	1	6	4	10	113	85	198
7 years and under 10 years	2	3	5	3	1	4	7	7	14	128	108	236
10 years and under 12 years	..	2	2	..	1	1	2	1	3	69	60	129
12 years and under 15 years	1	2	3	2	1	3	1	2	3	84	87	171
15 years and under 20 years	..	..	..	..	1	1	4	3	7	128	102	230
20 years and over	..	..	..	..	..	..	8	6	14	221	145	366
Totals, Brisbane Mental Hospital	**197**	**303**	**500**	**132**	**73**	**205**	**140**	**118**	**258**	**1,418**	**1,217**	**2,635**
TOOWOOMBA MENTAL HOSPITAL.												
Under 1 month	12	7	19	16	41	57	2	4	6	4	3	7
1 month and under 3 months	19	19	38	9	17	26	1	6	7	9	13	22
3 months and under 6 months	8	22	30	7	7	14	1	3	4	7	17	24
6 months and under 9 months	4	16	20	1	3	4	4	3	7	3	17	20
9 months and under 12 months	1	2	3	..	7	7	..	..	..	10	13	23
1 year and under 2 years	3	3	6	6	4	10	2	1	3	18	24	42
2 years and under 3 years	1	2	3	2	4	6	..	..	..	19	19	38
3 years and under 5 years	..	1	1	5	5	10	3	3	6	38	26	64
5 years and under 7 years	..	..	..	..	2	2	5	1	6	35	30	65
7 years and under 10 years	..	..	..	2	2	4	1	2	3	44	40	84
10 years and under 12 years	..	..	..	..	3	3	4	2	6	36	36	72
12 years and under 15 years	..	..	..	..	1	1	2	..	2	44	40	84
15 years and under 20 years	..	..	..	1	2	3	5	2	7	76	73	149
20 years and over	..	..	..	6	14	20	12	9	21	258	236	494
Totals, Toowoomba Mental Hospital	**48**	**72**	**120**	**55**	**112**	**167**	**42**	**36**	**78**	**601**	**587**	**1,188**
IPSWICH MENTAL HOSPITAL.												
Under 1 month	..	..	..	5	7	12	..	..	..	3	1	4
1 month and under 3 months	..	..	..	2	2	4	2	..	2	6	8	14
3 months and under 6 months	2	..	2	2	3	5	1	..	1	10	5	15
6 months and under 9 months	..	..	..	..	1	1	..	..	..	7	5	12
9 months and under 12 months	..	..	..	3	1	4	..	..	..	6	4	10
1 year and under 2 years	7	..	7	4	5	9	1	..	1	19	12	31
2 years and under 3 years	2	..	2	5	5	10	..	..	..	14	9	23
3 years and under 5 years	2	1	3	2	..	2	..	..	..	35	22	57
5 years and under 7 years	..	..	..	1	..	1	1	..	1	40	23	63
7 years and under 10 years	..	..	..	1	..	1	..	..	..	24	30	54
10 years and under 12 years	..	..	..	..	1	1	..	..	..	22	7	29
12 years and under 15 years	..	..	..	..	..	..	..	..	..	45	31	76
15 years and under 20 years	..	..	..	..	..	..	..	1	1	43	21	64
20 years and over	..	..	..	..	..	..	7	1	8	92	38	130
Totals, Ipswich Mental Hospital	**13**	**1**	**14**	**25**	**25**	**50**	**12**	**2**	**14**	**366**	**216**	**582**
MOSMAN HALL.												
Under 1 month	2	..	2	5	..	5	..	..	..	4	..	4
1 month and under 3 months	20	..	20	..	..	..	..	..	..	11	..	11
3 months and under 6 months	11	..	11	2	..	2	1	..	1	8	..	8
6 months and under 9 months	2	..	2	..	..	..	..	..	..	8	..	8
9 months and under 12 months	2	..	2	..	..	..	..	..	..	5	..	5
1 year and under 2 years	1	..	1	..	..	..	1	..	1	9	..	9
2 years and under 3 years	..	..	..	..	..	..	2	..	2	11	..	11
3 years and under 5 years	2	..	2	..	..	..	..	..	..	18	..	18
5 years and under 7 years	1	..	1	..	..	..	..	..	..	4	..	4
7 years and under 10 years	..	..	..	..	..	..	..	..	..	8	..	8
10 years and under 12 years	..	..	..	..	..	..	..	..	..	3	..	3
12 years and under 15 years	..	..	..	..	..	..	..	..	..	2	..	2
15 years and under 20 years	..	..	..	..	..	..	..	..	..	2	..	2
20 years and over	..	..	..	..	..	..	..	..	..	4	..	4
Totals, Mosman Hall, Charters Towers	**41**	..	**41**	**7**	..	**7**	**4**	..	**4**	**97**	..	**97**
Grand Totals, all Hospitals	**299**	**376**	**675**	**219**	**210**	**429**	**198**	**156**	**354**	**2,482**	**2,020**	**4,502**

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* For the purposes of this table patients discharged under Section 49 (3) and Voluntarily Left have been classified under these headings.

TABLE LXXXIV.

EXPENDITURE TABLE FOR THE FINANCIAL YEAR ENDED 30TH JUNE, 1958.

—	Brisbane Mental Hospital.	Toowoomba Mental Hospital.	Ipswich Mental Hospital.	Mosman Hall, Charters Towers.	Total and Average Costs.
Average Number Daily Resident.	2,382	1,190	572	83	4,227
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Total expenditure	1,090,654 15 8	432,494 2 5	370,389 19 6	65,363 18 7	1,958,902 16 2
Sales	5,726 4 6	841 13 0	1,883 9 11	141 4 6	8,592 11 11
Collections	57,695 14 8	2,490 17 9	2,559 7 2	591 9 9	63,337 9 4
Net Expenditure	1,027,232 16 6	429,161 11 8	365,947 2 5	64,631 4 4	1,886,972 14 11
					Average Costs.
Gross cost per Patient per annum	457 17 6	363 8 10	647 10 8	787 10 4	463 8 6
Net cost per Patient per annum	431 4 11	360 12 9	639 15 2	778 13 9	446 8 2
Gross cost per Patient per week	8 16 1	6 19 10	12 9 0	15 2 11	8 18 3
Net cost per Patient per week	8 5 10	6 18 9	12 6 1	14 19 6	8 11 8

TABLE LXXXV.

STATEMENT SHOWING EXPENDITURE BY THE DEPARTMENT OF PUBLIC WORKS AT MENTAL HOSPITALS AND AT THE EPILEPTIC HOME DURING THE FINANCIAL YEAR ENDED 30TH JUNE, 1958.

Place.	Expenditure, 1957–58.		
	Revenue Fund.	Loan Fund.	Total.
	£ s. d.	£ s. d.	£ s. d.
Mental Hospitals—			
Brisbane (Excluding Expenditure at the Repatriation Hospital)	8,908 17 5	41,166 17 9	50,075 15 2
Mosman Hall	27 7 6	78,107 18 7	78,135 6 1
Ipswich	2,781 11 9	130,146 15 5	132,928 7 2
Toowoomba	766 19 4	52,257 13 6	53,024 12 10
Epileptic Home—			
Toowoomba	589 9 11	8,029 18 1	8,619 8 0
	£13,074 5 11	£309,709 3 4	£322,783 9 3

DETAILS OF EXPENDITURE ON MAJOR WORKS—MENTAL HOSPITALS.

		Expenditure. 1957–58.
		£ s. d.
Brisbane	Erection of Ward "B"—Farm Colony ..	11,856 12 7
	Augmentation of Water Supply	11,618 2 11
	New Bowling Club Pavilion	4,269 2 3
	Repairs and Painting	4,035 16 0
	Extension of Water Supply—Farm Colony ..	2,835 4 10
Mosman Hall	Male Admission Ward	40,201 12 5
	Erection of Convalescent Ward	31,158 19 8
	Supply and Erection of Steel Tank	1,667 11 7
Ipswich	Erection of New Ward for Females	105,379 8 6
	Erection of additions to Nurses' Quarters ..	8,843 15 3
	Erection of Shelter Shed—Female Ward I ..	3,328 19 4
	Visitors' Shelter Shed—Male Ward II	2,875 14 3
	Erection of Artisans' Block	2,712 15 6
Toowoomba	Improvements to Sculleries, Bathrooms and Lavatory accommodation	50,148 5 1
Epileptic Home—Toowoomba ..	Installation of Steam and Condensate Service ..	7,670 15 7

TABLE LXXXVI.

POPULATION CHANGES AT EPILEPTIC HOME DURING THE YEAR 1957–58.

PATIENTS AT 30TH JUNE, 1957 : MALES 48 ; FEMALES 60 ; TOTAL 108.
FOR YEAR ENDED 30TH JUNE, 1958.

Age.	Admitted.		Discharged.		To Ment. Hosp.		Deaths.		Remaining.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Under 5 years	..	..	..	..	..	..	..	..	..	..	..
5—10 years	..	..	..	..	..	..	..	..	..	1	1
10—15 years	2	2	1	1	..	1	..	..	5	3	8
15—20 years	..	2	..	1	..	..	..	1	6	8	14
20—25 years	1	..	..	..	..	..	..	..	9	6	15
25—30 years	..	..	..	..	..	..	..	1	5	3	8
30—35 years	..	1	..	..	..	..	..	1	9	7	16
35—40 years	..	..	..	1	..	1	..	..	2	5	7
40—45 years	..	..	..	..	..	..	..	..	2	9	11
45—50 years	..	..	..	..	..	..	..	..	5	4	9
50—55 years	..	..	..	..	..	..	2	..	2	6	8
55—60 years	..	..	..	..	..	..	..	..	..	4	4
60—65 years	..	..	..	..	..	..	..	..	1	1	2
Over 65 years	..	..	..	..	..	..	..	1	2	3	5
Totals	3	5	1	3	..	2	2	4	48	60	108

PATIENTS RESIDENT—

Under 5 years	36
5—10 years	21
10—15 years	17
15—20 years	13
Over 20 years	21
	108

CAUSES OF DEATH—

Male aged 54.	Basal Pneumonia, Left Ventricular Failure.
Male aged 15.	Broncho Pneumonia, Cerebral Degeneration.
Female aged 66.	Broncho Pneumonia, Left Ventricular Failure.
Female aged 34.	Asphyxia.
Female aged 29.	Status Epilepticus, Cerebral Degeneration.
Female aged 18.	Acute Myocarditis, Epilepsy.

TABLE LXXXVII.

EXPENDITURE TABLE, EPILEPTIC HOME, FOR THE TWELVE MONTHS ENDED 30TH JUNE, 1958.

Average Number Daily Resident—108.

	£	s.	d.
Gross Expenditure	36,550	9	6
Collections	12,103	8	4
Sales	9	19	0
Net Expenditure	24,437	2	2
Gross cost per patient per annum	338	8	7
Net cost per patient per annum	226	5	5
Gross cost per patient per week	6	10	2
Net cost per patient per week	4	7	0

TABLE LXXXVIII.

Yearly Summary of New Patients Treated at the Psychiatric Clinic, classified in age groups according to Diagnosis, 1957–58.

—	0–4.		5–9.		10–14.		15–19.		20–29.		30–39.		40–49.		50–59.		60 and over.		Total.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Schizophrenia	..	..	..	..	..	1	5	3	9	11	10	17	5	12	2	5	..	1	31	50	81
Manic-Depressive	..	..	..	..	..	..	..	..	1	..	2	1	..	6	1	2	1	4	5	13	18
Paranoia and Paranoid States	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1
Organic Psychoses ..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	1	1	..	3	1	4
Senile Psychoses	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2	2
Other Psychoses	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	1
Involutional Melancholia ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	1	1	1	6	7
																			41	73	114
Obsessive-Compulsive ..	..	..	..	..	..	..	..	..	..	1	1	..	1	1	..	..	..	..	2	2	4
Psychoneuroses	..	..	2	2	4	1	7	7	10	18	13	36	9	24	9	9	..	7	54	104	158
Psychoneurosis with Psychosomatic Symptomatology	..	..	..	1	..	1	1	..	1	..	..	2	1	3	..	..	..	1	3	8	11
																			59	114	173
Alcoholism and Drug Addiction	..	..	..	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	2	1	3
Inadequate and Immature Personality	8	8	8	7	10	11	5	5	4	2	3	..	2	1	..	..	..	..	40	34	74
Pathological Personality ..	..	..	3	..	7	..	5	5	6	4	1	1	2	..	1	..	..	..	25	10	35
Organic	..	..	..	..	1	..	..	..	1	..	1	..	..	..	..	..	..	1	3	1	4
Primary Childhood Behaviour Disorders ..	11	11	36	20	35	20	6	5	1	1	..	..	..	..	..	..	..	..	89	57	146
																			157	102	259
Epilepsy	..	..	1	..	1	4	2	..	3	1	1	1	..	..	..	..	..	..	8	6	14
Physical only	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	2	1	3
Mental Deficiency	9	1	9	4	5	3	6	4	3	1	3	2	1	..	..	..	..	..	36	15	51
Borderline Deficiency ..	..	1	2	2	3	4	1	1	1	..	1	..	..	..	..	..	..	..	8	8	16
																			44	23	67
Domestic Problems ..	..	..	..	..	..	..	..	1	..	..	2	3	..	..	..	..	..	..	2	4	6
Stammering	4	2	8	2	13	2	2	1	2	..	2	..	..	..	..	..	..	..	31	7	38
Aphonia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dyslalia and Ret. Sp. Devt.	15	10	17	5	2	3	..	..	..	..	..	..	..	..	..	..	..	..	34	18	52
Cleft Palate..	3	2	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	3	8
Aphasia and Dysphasia ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	1	2	1	3
Laryngectomy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1
Deaf and Partially Deaf ..	..	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	3
Sigmatism	..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	3
Dysarthria	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
																			76	33	109
N.A.D.	..	..	2	2	..	1	1	1	4	..	4	2	1	1	..	..	..	..	12	7	19
Not yet diagnosed ..	3	..	1	2	7	2	3	2	..	2	..	2	2	..	1	2	..	..	17	12	29
Grand Total ..	53	38	93	49	90	53	44	35	48	41	46	68	25	49	16	24	5	19	420	376	796

TABLE LXXXIX.

Sources of Referral of Patients to Psychiatric Clinic Year ended 30th June, 1958.

	Male.	Female.	Total.
Personal	126	118	244
Commonwealth Government Departments ..	15	11	26
State Government Departments	68	35	103
Medical Practitioners	96	102	198
General and Mental Hospitals, Red Cross, &c.	69	85	154
Others	46	25	71
Grand Total	420	376	796

TABLE XC.

Showing Admissions, Discharges, and Deaths at the Wacol Repatriation Pavilion during the Year ended 30th June, 1958.

Total number of patients on books as at 30th June, 1957		108
Transferred from Brisbane Mental Hospital		39
Admitted		2
		149
Discharged, recovered	9	
Discharged, relieved	7	
Discharged. Not improved	1	
Voluntarily left	10	
Died	2	
Transferred to Brisbane Mental Hospital	15	
Absconded (Returned via B.M.H.)	2	
		46

Total number of patients on books as at 30th June, 1958	103
Total number of patients on leave as at 30th June, 1958	—
Total number of patients in residence as at 30th June, 1958	103
Average number of patients daily resident	100

DIVISION OF LABORATORY SERVICES.

LABORATORY OF MICRO-BIOLOGY AND PATHOLOGY.

Director: J. I. Tonge, M.B., B.S. (Syd), D.C.P. (Syd.), M.C.P.A.
Deputy Director: M. J. J. O'Reilly, M.B., B.S. (Syd.), M.C.P.A.
Pathologist: A. Davison, M.B., B.S. (Qld.), M.C.P.A.
Technical Supervisor: H. E. Brown.

1. Statistical Summary.
2. Staff and Development.
3. Q. Fever.
    - (*a*) Q. Fever in Association with Sheep.
    - (*b*) The Complement Fixation Test with Sheep Sera.
    - (*c*) The Agglutination Test with Sheep Sera.
    - (*d*) The Outbreak of Q. Fever at a Fellmongery.
    - (*e*) Survey of Meatworkers.
    - (*f*) Survey of Dairy Cattle Sera.
4. Leptospirosis.
    - (*a*) Typing of Cultures.
    - (*b*) The Australian "Canicola" Strains.
    - (*c*) *L. kremastos* and *L. mini*.
    - (*d*) Survey of Aborigines.
    - (*e*) Leptospiral Infections in Animals in North Queensland.
    - (*f*) The Sensitized Erythrocyte Lysis Test.
5. Resistance of *Staphylococcus Aureus* to Antibiotics.
6. Typing of Salmonella Cultures.
7. Tuberculosis Laboratory.
8. Study of Resected Lung Tissue.
9. *Mycobacterium Ulcerans*.
10. "Milkers Nodule".
11. Psittacosis—A Case in Bundaberg.
12. Exfoliative Cytology.
13. The Morgue.
14. Publications.

1. Statistical Summary, 1957-58.

TABLE XCI.

1. Bacteriology.

A. Specimens of Human Origin.

Specimen.	Mode of Examination.	Number.
Swabs—		
Throat Nose	Culture	214
	Direct Smear	4
	Antibiotic Sensitivity Tests	82
Urethra Cervix Bartholin's Gland Anus	Culture	1,120
	Direct Smear	5,420
	Antibiotic Sensitivity Tests	22
Ear	Culture	38
	Antibiotic Sensitivity Tests	29
Eye	Culture	26
	Antibiotic Sensitivity Tests	13
Mouth	Culture	4
	Antibiotic Sensitivity Tests	5
Neck	Culture	1
	Antibiotic Sensitivity Tests	1
Arm	Culture	1
	Antibiotic Sensitivity Tests	1
Hand	Culture	4
	Antibiotic Sensitivity Tests	4
Leg	Culture	5
	Antibiotic Sensitivity Tests	4
Ankle	Culture	1
	Antiboitic Sensitivity Tests	1
Umbilicus	Culture	1
Pus	Culture	292
	Direct Smear	6
	Antibiotic Sensitivity Tests	250
Pleural Fluid	Culture	16
	Antibiotic Sensitivity Tests	6
Cerebrospinal Fluid	Culture	43
	Microscopic	75
	Antibiotic Sensitivity Tests	1
	Animal Inoculation	1
Synovial Fluid	Culture	7
	Antibiotic Sensitivity Tests	1
Seminal Fluid	Microscopic	24
Laryngeal Wash	Culture	2
Peritoneal Fluid	Culture	1
Gastric Lavage	Culture	2
Tissue	Culture	1
Serous Exudate	Direct Smear	1,419
	Dark Ground Microscopy	5

TABLE XCI.—*continued.*

1. BACTERIOLOGY—*continued.*

A. Specimens of Human Origin—continued.

Specimen.	Mode of Examination.	Number.
Sputum ..	Culture	301
	Direct Smear ..	8
	Antibiotic Sensitivity Tests ..	207
Blood	Culture	61
Urine ..	Culture	894
	Microscopic	1,801
	Antibiotic Sensitivity Tests ..	300
Faeces ..	Culture	300
	Microscopic	19
	Antibiotic Sensitivity Tests ..	2
Post-Mortem Swabs and Tissues ..	Culture	52
Virulence Tests for Corynebacterium Diphtheriae ..	..	..
	Total 1957–58 ..	13,098*
	Total 1956–57 ..	21,009

* This apparent reduction is due to a new method of computing the Antibiotic Sensitivity tests.

TABLE XCI.—*continued.*

TUBERCULOSIS SECTION.

Specimen.	Mode of Examination.	Number.
Sputum ..	Culture	6,768
	Microscopic	6,768
	Animal Inoculation	87
Gastric Aspiration	Culture	2,588
	Animal Inoculation	1,087
Laryngeal Swabs ..	Culture	92
Urine ..	Culture	136
	Animal Inoculation	54
Pus	Culture	11
	Microscopic	11
	Animal Inoculation	10
Pleural Fluid	Culture	21
	Microscopic	21
	Aminal Inoculation	21
Cerebrospinal Fluid	Culture	1
	Microscopic	1
	Animal Inoculation	1
Synovial Fluid	Culture	2
	Microscopic	2
	Animal Inoculation	2
Ulcer Swab ..	Culture	1
	Microscopic	1
Sinus Swabs	Culture	2
Faeces ..	Culture	1
	Microscopic	1
Tissue ..	Culture	34
	Microscopic	34
	Animal Inoculation	13
Culture	Sensitivity Tests ..	218
	Total 1957–58 ..	17,989
	Total 1956–57 ..	12,365

TABLE XCI.—*continued.*

B. Foods and Waters.

Specimen.	Mode of Examination.	Number.
Water ..	Culture	199
	Plate Count ..	198
	Microscopic	6
Milk	Culture	418
	Plate Count ..	415
	Reductase Test ..	393
	Agglutination against Brucella abortus	4
	Animal Inoculation	4
Goat's Milk ..	Culture	1
	Plate Count ..	1
Skim Milk ..	Culture	3
	Plate Count ..	3
	Reductase Test ..	3
Flavoured Milk	Culture	1
	Plate Count ..	1
Tinned Milk	Culture	1
Ice Cream ..	Culture	87
	Plate Count ..	86
Ice Blocks ..	Culture	36
	Plate Count ..	36
Ice Cream Mix	Culture	6
	Plate Count ..	6
Cream ..	Culture	4
	Plate Count ..	2
Butter ..	Culture	7
	Plate Count ..	7
Cheese	Culture	4
Pineapple Juice ..	Culture	3
Soft Drinks	Culture	37
Bottled Beer ..	Culture	1
Tinned Fruit.. ..	Culture	3
Tinned Beetroot ..	Culture	2
Tinned Sardines ..	Culture	2
Oysters	Culture	5
Dried Oysters ..	Culture	1
Dehydrated Prawns..	Culture	1
Mushrooms	Culture	2
Dried Mushrooms ..	Culture	1
Dried Plums ..	Culture	1
Frozen Peas and Carrots	Culture	2
Frozen Cauliflower ..	Culture	2
Frozen Beans ..	Culture	2
Sausages	Culture	5
Meat	Culture	5
" Dim Sims " ..	Culture	6
Fat	Culture	1
Potato Salad.. ..	Culture	1
" Granita " ..	Culture	1
	Plate Count ..	1
Olives..	Culture	1
Flavouring Essence ..	Culture	3
Confectionery ..	Culture	3
Cocoanut	Culture	93
Tea	Culture	1
	Total 1957–58 ..	2,118
	Total 1956–57 ..	1,836

TABLE XCI.—*continued.*

C. Various Materials.

Specimen.	Object of Examination.	Number.
Disinfectants and Antiseptics	Rideal-Walker Coefficient	52
	Germicidal Value ..	3
Liquid Soap	Rideal-Walker Coefficient	2
Bottles	Sterility	11
Glasses	Sterility	25
Bacterial Cultures	Identification ..	12
	Antibiotic Sensitivity Tests ..	2
" Megasse "	Culture	1
Talcum Powder ..	Culture	4
Olive Oil	Culture	1
Dressing Pad ..	Culture	1

TABLE XCI.—*continued.*

C. Various Materials—continued.

Specimen.	Object of Examination.	Number.
Cord Ties	Culture	1
Septic Effluent	Culture	1
Swabs from Sewage	Culture	1
Swabs from Water	Culture	1
Swabs from Food	Culture	2
Swabs from Crockery	Culture	5
Swabs from Phone	Culture	1
Crushed Ice	Culture	4
Skin Scrapings	Culture	11
	Antibiotic Sensitivity Tests	1
Sediment from Tap	Presence of Iron Bacteria	1
Hair	Presence of Fungi	4
	Total 1957–58	147
	Total 1956–57	297

TABLE XCI.—*continued.*

2. SEROLOGY.

——	Number.
Serum Agglutination (Screen)—	
Eberthella typhosa (O)	10
Eberthella typhosa (H)	2,875
Salmonella paratyphi (H)	2,872
Salmonella schottmülleri (H)	2,871
Proteus OX19	2,873
Proteus OXK	2,872
Brucella abortus	2,874
Leptospira icterohaemorrhagiae	3,722
Leptospira canicola	3,722
Leptospira australis A	3,723
" Robinson " strain of *leptospira*	3,722
Leptospira australis B	3,722
" Esposito " Strain of *leptospira*	3,723
Leptospira pomona	3,722
Leptospira grippotyphosa	3,722
Leptospira medanensis	3,722
Leptospira kremastos	3,722
Leptospira mini	3,722
Leptospira hyos	3,722
Leptospira celledoni	3,722
Leptospira autumnalis	3,723
Coxiella burneti	60
Erythrocytes " O "	4
Streptococcus MG	1
Serum Agglutination Tests (Quantitative)	2,700
Paul Bunnell Tests	349
Leptospiral Strains Typed (58)	
Agglutination Tests Performed in Typing	3,500
Leptospiral Antisera Prepared	16
Leptospiral Antisera Absorbed	29
Sensitized Erythrocyte Lysis (S.E.L.) Tests	417
Complement Fixation Tests—	
Coxiella burneti—	
Routine	4,051
Quantitative	759
Typhus Fever Murine (Soluble)—	
Routine	252
Quantitative	371
Psittacosis Virus C.F.	49
Eagle Wassermann (Serum)—	
Routine	6,576
Quantitative	57
Eagle Wassermann (C.S.F.)	171
Kline	6,893
Kahn	1,134
Lange Colloidal Gold Reaction (C.S.F.)	412
Colloidal Gold Reaction (Serum)	1
Total 1957–58	97,160
Total 1956–57	85,700

TABLE XCI.—*continued.*

3. BIOCHEMISTRY.

Specimen.	Examined For.	Number.
Whole Blood	Urea	456
	Glucose	99
	Uric acid	155
	Chloride	18
	Pigments	22
Plasma	Fibrinogen	1
Serum	Protein	717
	Cholesterol	95
	Bilirubin	396
	Chloride	34
	Calcium	40
	Inorganic phosphate	16
	Acid phosphatase	88
	Alkaline phosphatase	416
	Thymol turbidity	376
	Thymol flocculation	376
	Zinc sulphate turbidity	375
	Paper Electrophoresis	455
	Amylase	17
	Diastase	1
	Bromide	1
	Phosphorus	3
	Iron	7
	Aceto-acetic acid	1
Cerebrospinal Fluid	Protein	73
	Globulin	61
	Chloride	64
	Glucose	63
	Urea	8
	Glutamine	1
Pleural Fluid	Protein	1
Urine	Albumin	1,894
	Sugar	1,915
	Pigments	4
	Bilirubin	8
	Urobilin	8
	Urobilinogen	12
	Chloride	1
	Calcium	7
	Inorganic phosphate	1
	Bence Jones Protein	2
	Aceto-acetic acid	3
	Bile	1
	Acetone	1
Faeces	Total, Split and Unsplit Fats	75
	Occult Blood	75
	Creatorrhoea	5
	Trypsin	1
Renal Calculi	Chemical constitution	16
Functional Tests	Glucose tolerance tests	184
	Urea clearance tests	86
	Urea concentration tests	89
	Fractional test meals	73
	Total 1957–58	8,897
	Total 1956–57	9,992

TABLE XCI.—*continued.*

4. HAEMATOLOGY.

——	Number.
Cell Counts—	
Red Cells (Total)	300
Red Cells (Stippled)	1,234
Reticulocytes	34
White Cells (Total)	2,364
White Cells (Differential)	2,502
Platelet Count	70
Haemoglobin	8,884
Haematocrit	5,459
Sedimentation Rate	697
Coagulation Time	82
Bleeding Time	82
Red Cell Fragility	4
Le Cells	15
Cross Matching	1
Blood Grouping (A.B.O.)	3,175
Blood Grouping (Rh)	3,175
Rh Antibodies	1,001
Total 1957–58	29,079
Total 1956–57	33,742

TABLE XCI.—*continued.*

5. PARASITOLOGY.

Specimen.	Object of Examination.	Number.
Faeces	Amoebae (Cysts and vegetative)	74
	Helminth ova	384
Pus	*Trichomonas vaginalis*	6
Blood	*Plasmodium sps.*	21
Helminth	Identification	12
Arthropod	Identification	3
	Total 1957–58	500
	Total 1956–57	514

TABLE XCI.—*continued.*

6. VARIOUS TESTS.

——	Number.
Male Toad Test (Pregnancy)	2,171
Aschheim Zondek Test (Pregnancy)	24
Casoni Skin Test	6
Histamine Skin Test	1
" Cat-Scratch " Skin Test	3
Total 1957–58	2,205
Total 1956–57	2,327

TABLE XCI.—*continued.*

7. HISTOLOGY.

Tissue Sections Prepared.	Number.
Human—	
Biopsy (specimens received 3,815)	6,413
Post-Mortem	1,656
Medico-Legal Tissues	60
Stained Slides of Animal Tissues	141
Total 1957–58	8,270
Total 1956–57	6,762

TABLE XCI.—*continued.*

8. EXFOLIATIVE CYTOLOGY.

Specimen.	1956–57	1957–58
Sputum	381	1,061
Bronchial or Tracheal Washing	17	17
Pleural Fluid	11	24
Miscellaneous	6	11
Total	415	1,113

TABLE XCI.—*continued.*

9. MEDICO-LEGAL.

——	Number.
Clothing—	
Blood	85
Spermatozoa	71
Various Articles—	
Blood	28
Spermatozoa	12
Smears—Spermatozoa	28
Tissue—Examination	60
Blood—Grouping	6
Blood-Stained Articles—Determination of Blood Group of Stains	18
Scrapings—Presence of Blood	1
Hair—Identification	11
Skull—Identification	3
Skeleton—Identification	1
Bones—Identification	5
Earth—	
Presence of Blood	2
Identification	2
Excreta—Examination	1
Total 1957–58	334
Total 1956–57	474
Post-Mortem Examinations—1957–58	652
1956–57	587
Attendances at Courts—	
Supreme Court	18
Police Court	22
Coroner's Court	12
Other Courts	17
	69

2. Staff and Development.

Dr. Wang Sung Tseng, visiting Australia on a W.H.O. Travelling Fellowship, from the Tuberculosis Centre in Taipei, Formosa, spent five months working in this laboratory in 1957.

There has been an increase in the volume of work in most sections this year and this has been most marked in the tuberculosis laboratory, serology, histology and in exfoliative cytology. The apparent decrease in the amount of general bacteriology as shown in the statistical summary is misleading and is almost entirely due to a change in the method of computing sensitivity tests. A total of 652 post-mortem examinations has been performed, an increase of 65 over the previous year.

That the service provided by this laboratory is valued is evident by the steadily increasing demands that are made upon it. The laboratory has a proud record and every effort is made to provide a pathological service of worth to the State. Close co-operation is maintained with the Queensland Institute of Medical Research in various research projects and in certain fields the Laboratory serves as a reference centre not only for the State but for the Commonwealth. Unfortunately, the scope and volume of work carried out has had to be limited owing to overcrowded laboratory accommodation. It is pleasing to learn that the Public Service Commissioner has recommended that early action be taken in the construction of the proposed new building though it is to be regretted temporary relief cannot be given at present.

It is planned that the clinical pathology service will be expanded in all sections, a virus diagnostic unit established and facilities provided for medico-legal investigations. A mycology unit will be established and vaccine preparation undertaken as required. The function of the Leptospiral Reference Laboratory will be developed and full-time technical staff provided for it. When the new accommodation is provided for the latter, financial assistance might be available from outside sources.

The new accommodation will allow diagnostic kits covering a wide range to be prepared and made available on request to areas not served by any local laboratory service. Supervision will be maintained over technicians in country hospitals and regular refresher courses provided. Such activities cannot be contemplated at present with the limited laboratory space now available.

3. Q. Fever.

One hundred and ninety-four cases of Q. fever have been diagnosed in this laboratory during the current year, and of these 187 were from Queensland and 7 from northern New South Wales. The total number of cases diagnosed during the year 1956-57 was seventy-six. This increase in the incidence of the disease appears to be a real one and is far greater than can be accounted for either by the increased number of sera submitted or by active case finding.

The geographical distribution of these cases is as follows:—Brisbane 92, Charleville 11, Tambo 8, Cairns 7, Townsville and Atherton 6 each, Wondai and Toowoomba 4 each, Allora, Gympie, Rockhampton, Nanango and Blackall 3 each, Ingham, Bundaberg, Pomona, Maleny, Oakey, Esk, Chinchilla, Beaudesert, Innisfail, Samford, Gladstone and Kilcoy 2 each, and one case each from Beechmont, Mackay, Beenleigh, Barcaldine, Caboolture, Miles, Nambour, Cooroy, Herberton and Weipa Mission. Of the cases from New South Wales 5 were from Tenterfield and one each from Newcastle and Lismore.

(*a*) *Q. Fever in Association with Sheep.*

The association of Q. fever with sheep has not previously been observed in Queensland although it is well recognised in Great Britian and California. Prior to this year only two cases of Q. fever had been diagnosed in Western Queensland, one, a clerk in Springsure, the other a shearer from Charleville. During the current year thirty-two further cases have been recognised, four of the diagnoses being retrospective. It is significant that of the total of 34 cases, only three had not been occupationally associated with sheep.

In January, 1958, an outbreak of Q. fever occurred on a sheep station near Tambo, Queensland. At least 15 of a team of 34 shearers developed Q. fever. A study of the incubation period of the disease pointed to infection taking place at the beginning of the shearing and the circumstances pointed strongly to infection having occurred from the sheep at this time. The only obvious common factor to all 15 patients was that they had worked in the shearing shed. That the sheep were the probable source of infection was supported by the demonstration of agglutinins against *C. burneti* in 11 per cent. of the Tambo sheep.

In those countries where Q. fever cases have been found in association with sheep the great majority occurred at the time of lambing or lactation. This association was not present in the above series since six months had elapsed since the previous lambing season and if parturition had been the source of the rickettsiae one would have to postulate some means by which their survival could occur for so long a period. It is also considered that the kangaroo may serve as a natural reservoir of Q. fever and that infection may have been spread by the tick *Amblyomma triguttatum* which was unusually prevalent at the time of the outbreak. The possible role of the dog tick *Rhipicephalus sanguineus* must be considered.

During the preliminary investigation of the outbreak, human and animal sera were collected and forwarded to the laboratory for complement fixation tests against *C. burneti.* Of eight station employees only one stockman was found to give a positive test and he was convalescing from an attack of Q. fever. The absence of infection in these station employees lent weight to shearing, in contrast to other station work being the signficant activity related to infection

Of the animals sera there were 177 sheep, 13 cows, 11 calves, 9 horses, 9 dogs, 20 goats, 5 kangaroos and 1 pig. Of these the horse, pig and goat sera were negative but antibodies were present in sera from 2 cows, 1 calf and 1 kangaroo. The difficulties experienced with the complement fixation tests in the sheep and dog sera will be discussed below. The presence of *C. burneti* infection in the dairy herd on the property did not seem to be associated epidemiologically with the infection of the shearers. Of 9 cattle sera collected on other stations in the district, 2 were positive.

(*b*) *The Complement Fixation Test with Sheep Sera.*

The development of non-specific complement fixing properties in stored animal sera, particularly in sheep, has been noted by a number of workers using the complement fixation test in Q. fever surveys in the U.S.A. and Europe. We have encounted the same problem in the examination of animal sera in this survey.

(i.) *Development of Non-specific Reactivity During Storage.*—Sera from Tambo sheep were tested in the first instance at a dilution of 1-8 using Lederle "Nine Mile" antigen. The time which elapsed from the bleeding of the sheep to the performing of the laboratory tests ranged from one to eleven days. None of 37 sera tested on the day after bleeding, reacted but the incidence of positive reactions increased thereafter in other batches of sera in proportion to the time interval before examination. These results are set out in Table XCII.

The sera in groups B, C, and D which reacted with Q. fever antigen were re-examined one week later in order to determine their titre. Without exception they were then either frankly anticomplementary or they reacted in some measure* with both Q. fever and typhus antigens. Twenty sera from group A, re-examined after three weeks were likewise anticomplementary or exhibited non-specific reactions.

TABLE XCII.

Tambo Sheep Sera—Results of C.F. Tests with *C. burneti* (9 Mile) Antigen.

Sera.	Days before Examination.	Number Test.	Number of Positive Reactions.	Per cent. Positive.
A. Sheep No. 1 – 37	1	37	0	0
B. Sheep No. 139–158	5	20	1	5
C. Sheep No. 105–138	6	34	5	17·5
D. Sheep No. 38–104	7	67	18	27
E. Sheep No. 159–177	11	19	16	84·2

Storage at 4 deg. C. on the clot is reported to be effective in preventing the development of non-specific reactivity for up to 1-2 weeks. However sera in groups B and C, Table I., which were separated from the clot only on the day before examination, exhibited an increase in non-specific reactions in direct relationship to the total time since collection. The circumstances of their collection in the field and the two days delay in transit before refrigeration in the laboratory may be significant.

(ii.) *Elimination of Non-specific Reactions.*—As the development of reactivity with Q. fever and typhus antigens appeared to be linked with anticomplementary activity, both being associated with conditions of storage, it was considered possible that both effects might be eliminated by the treatment of the sera by one or other of the several methods advocated for removing anticomplementary properties of serum, or treating sera for haemagglutination-inhibition tests. A number of sheep sera were therefore treated:

(*a*) With complement (Taran 1946).
(*b*) With kaolin* (Ruge 1956).
(*c*) With acetone and ether (Porterfield 1954).

The results were disappointing. None of these procedures, singly, effected any consistent improvement. However, it was found that if sera after treatment with complement were then treated with acetone and ether they gave clear cut negative reactions with both Q. fever and typhus antigens. Positive human sera treated similarily as controls, showed some decrease in titre. High titred sera dropped 2 tubes, low titred sera 1 tube (2 fold dilution). However, in no instance was antibody undetected. No positive sheep sera were available for controls, but five bovine sera from Tambo which had earlier given uncomplicated reactions with Q. fever antigen were similarly treated. In tests of treated and untreated bovine sera run on the same day, three treated sera showed no decrease in titre and the remaining two sera showed a drop of only one tube. The results of these tests on human and bovine sera are set out in Table XCIII.

TABLE XCIII.

Q. Fever Sera—Results of C.F. Tests with "Untreated" and "Treated" Sera.

Serum.	Untreated.		Treated with Complement Acetone and Ether.	
	C. burneti.	R. mooseri.	C. burneti.	R. mooseri.
Human "Q"	512	0	128	0
Human "Q"	256	0	64	0
Human "Q"	128	0	64–32	0
Human "Q"	32	0	16	0
Human Wool scour worker	32	0	16	0
Slaughterman	16	0	8	0
Bovine Tambo Cow 10	32	0	16	0
Bovine Tambo Cow 11	32	0	32	0
Bovine Tambo Calf 14	32	0	32	0
Bovine Tambo Cow 32	32	0	16	0
Bovine Tambo Cow 33	32	0	32	0

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*Sheep Nos. 53, 57 and 68 exhibited weak 1+ or 2+ reactions with *R. Mooseri*, although they were reported as negative with this antigen on 28.3.58, under our conventional system of reporting.

* We did not use "ordinary kaolin" as specified.

(iii.) *Examination of "Treated" Sheep Sera.*—All but three of the one hundred and seventy-seven sheep sera from Tambo were available for treatment, as outlined above, and for re-examination. These sera had been stored at –20 deg. C. for three months. The sera were retested but no positive reactions were encountered. Sera not retested were those from sheep Nos. 31, 163 and 169. Sheep 31 had given a valid negative reaction when first tested. Subsequently a quantity of pooled sheep serum was received from California for use as a positive control serum. This serum had a titre of 1:32 when tested with Lederle antigen (9 mile). It showed no evidence of anticomplementary or non-specific reactivity and its titre was reproducible in successive tests. The titre of this serum fell to 8, (++ in 1:16), on treatment with complement, acetone and ether.

Selected sheep sera were subsequently tested repeatedly both "treated" and untreated, using Lederle 9 mile antigen and also a Q. fever antigen (Higgins) obtained by courtesy of Dr. Orde Poynton of the Institute of Medical and Veterinary Science, Adelaide. Our results were characterized, however, by complete inconsistency. There was wide disagreement between antigens in tests performed concurrently and furthermore the results were not reproducible in subsequent tests. Positive and non-specific reactions appeared and disappeared both in "treated" and untreated sera on successive days, although routine tests on human sera and the Californian sheep pool serum made concurrently showed no irregularities. All sera were inactivated at 60 deg. C. for 30 minutes after being diluted 1:8.

In the circumstances it is felt that no valid conclusions can be drawn as to the incidence of *C. burneti* complement-fixing antibodies in the Tambo sheep sera.

(*c*) *The Agglutination Test with Sheep Sera.*

It is fortunate that the agglutination test appears to work satisfactorily with sheep sera but even with this test marked variation was noted with different antigens. Of the 174 sheep sera tested 20 were found to have agglutinins against *C. burneti* in titres varying from 1:8 to 1:64 using the Henzerling strain. Twenty of the sheep sera were tested with both the Nine-mile and Henzerling strains and of these only one gave a positive reaction with the former whilst five were positive with the Henzerling strain antigen. Whether this represents true strain specificity in the agglutination test or merely variation in the potency of the particular antigen remains to be seen. Marked differences in the sensitivity of different batches of antigen prepared from the same strain have been observed in the past.

It is of significance that of those sera listed in Group A (Table XCII) which had been collected under optimum conditions and tested promptly, nine gave a positive agglutination test with the Henzerling strain whilst all were negative with the complement fixation test using the "Nine-mile" antigen. It is thus apparent that even when sheep sera were collected and tested promptly the "Nine-mile" complement fixation test antigen was not adequate in this particular series.

(*d*) *Outbreak of Q. Fever at a Fellmongery.*

In March and April, 1958, nine cases of Q. fever occurred at a fellmongery in Brisbane and one further case occured in May. In eight cases the clinical diagnosis was confirmed by at least a fourfold rise in the titre of the complement-fixing antibody. In the other two, only a convalescent serum could be obtained but titres of 1:16 and 1:32 for *C. burneti* were obtained following a febrile illness, thus making the diagnosis of Q. fever extremely likely.

Since no other common factor could be discovered among the men affected, it seemed certain that the infection was introduced to the fellmongery on the sheep skins. Unfortunately, due to the large number of sheep skins handled each day, it was not possible to trace the source of the infected skins. It is of significance, however, that some of the sheep skins came from the abattoir where eight cases of Q. fever occurred during the same period.

The outbreak at the fellmongery was a most unusual occurrence and no such similar outbreak could be recalled by the manager or foreman in 30 odd years. Seven of those infected had been employed at the fellmongery for many years but had apparently not previously acquired any immunity.

(*e*) *Survey of Western Meatworkers for Antibodies to C. burneti.*

Between March 6th and May 26th, blood samples were submitted from 27 butchers and 23 slaughtermen in western towns. Complement fixating antibodies could not be demonstrated in the butchers but were found in 2 of the slaughtermen, from Emerald and Julia Creek respectively. The positive slaughterman from Emerald was aged 23 years and had been a meatworker in his present employment for 8 years. He gave a history of probable meningitis 8 years ago. The positive slaughterman from Julia Creek was aged 32 years and although in his present employ for only thirteen weeks he had been a meatworker for 9 years. His C.F. titre was 1:16. There was no history of any illness.

Since the meatworker at Emerald had spent all his working life in that locality it may be presumed that his infection occurred there. This then adds a new locality for the distribution of Q. fever. It would not be wise to draw any such conclusions from the patient at Julia Creek. It is hoped that this survey will be continued to cover all inland Queensland.

(*f*) *Survey of Dairy Cattle Sera for Antibodies to C. burneti.*

With the co-operation of the Director of Veterinary Services samples of serum from 179 dairy cows have been received from 8 western towns. These centres were, Goondiwindi, Hughenden, Winton, Dalby, Longreach, Charleville, Roma and Julia Creek. It was not possible to demonstrate complement fixing antibodies against *C. burneti* in any of these sera. It would be desirable for this survey to be extended.

4. LEPTOSPIROSIS.

Active collaboration with the Queensland Institute of Medical Research has continued during the year and 1668 sera from a variety of animals, both native and domestic, have been examined. In addition 31 leptospiral cultures of animal origin have been received for typing from the Field Station at Innisfail. From the Commonwealth Health Laboratory in Cairns 23 leptospiral cultures from patients have been typed. Details of the results of the serological typing of the cultures are set out in Table XCIV.

TABLE XCIV.

SEROLOGICAL TYPING OF LEPTOSPIRAL CULTURES.

Type.	Human Strains.	Animal Strains.
L. australis A	20	9
L. australis B	1	15
L. canicola	1	4
L. celledoni	..	1
Member of *hebdomadis* serogroup	1	1
Undetermined	..	1
Total	23	31

(*a*) *Typing of Cultures.*

There has been a great increase in the number of sera submitted for diagnosis from all parts of the State.

It was of interest to find an infection with *L. pomona* occurring in a stockman handling cattle at Winton. Only once previously has leptospirosis been recorded in this area. The occurrence of a non-specific rise in titre with *Proteus OXK* to diagnostic level in association with an acute infection with leptospirosis has again been observed.

At the request of the Commonwealth Serum Laboratories a comparison was made between two strains of *L. pomona,* "T262" and "1524" from Cornell University, N.Y., and the classical "Staines" strain, isolated in Queensland. It was found that all three strains were homologous, using the criteria of Wolff and Broom (1953).

(*b*) *The Australian "Canicola" Strains.*

Absorption studies on the "Canicola" strains isolated in North Queensland were commenced in 1955 and this work has been continued. It was found that the minority of these strains were of the "Hesp" type and were homologous with the type strain *L. canicola* (Hond Utrecht). The majority of the strains were of the "Patane" type and were antigenically distinct. The relationship of "Hesp" to "Patane" is one of an incomplete biotype. These relationships have been established by repeated cross-absorption tests. Alexander in Washington, however, considered the "Patane" strains to be a new heterologous serotype of the *Canicola* serogroup, from tests made with a subculture sent to him.

Four "Canicola" strains have been isolated from animals, two from bandicoots and two from rats. Bandicoot 99, bandicoot 108 and Rat 471 strains are homologous with "Patane", and this relationship has been established by complete cross-absorption tests. Rat 658 strains has not yet been tested as to type.

The incomplete nature of these studies is regretted but pressure of routine work has prevented any further progress during the past six months. A definite statement on the status of the "Patane" strain is precluded by the divergent results obtained here and by Alexander with regard to its relationship with *L. canicola* (Hond Utrecht). These differences may reflect the occurrence of quantitative antigenic veriations with different cultures of the strain or varying responses of experimental rabbits employed in the preparation of antisera. A further exchange of cultures and antisera may throw light on this matter.

This experience serves to emphasises the necessity for having one's antigenic analysis and classification of a strain checked by other Reference Laboratories. The premature creation of new serotypes often on inadequate evidence only serves to add to the confusion in an already complex field.

(*c*) *Serological Classification of the "Kremastos" Strain.*

The "Kremastos" strain was isolated in North Queensland from a patient of the same name in 1952. The preliminary serological typing was carried out in this laboratory and its relationship to serotypes within the *hebdomadis* serogroup established. This strain, along with the "Szwajizak" strain, was then sent to Dr. J. C. Broom and to Dr. J. W. Wolff for final antigenic analysis. Wolff has recently published this analysis (Trop. geogr. Med., Vol. 10, (1958), page 37) and he states that according to accepted criteria the "Kremastos" strain can be classified provisionally as a distinct serotype within the *hebdomadis* serogroup and has proposed the name *L. kremastos.* In this same paper Babudieri's work is confirmed in regarding the "Szwajizak" strain as the incomplete biotype of *L. mini.*

(*d*) *Survey of Aborigines for Leptospirosis and Q. Fever.*

Sera from 171 aborigines from missions on Cape York Peninsula and in the Gulf of Carpentaria were tested for evidence of leptospirosis and Q. fever. The results are set out in Table XCV.

TABLE XCV.

Mission.	No. of Sera.	No. + ve Leptospirosis (titre 1 : 30 or greater).	No. + ve Q. fever.
Mapoon	19	1	0
Weipa	23	4	1
Aurukun	30	4	1
Mitchell River ..	16	2	0
Burketown	12	0	0
Doomadgee	25	2	0
Mornington	38	4	0
Normanton	8	0	0
Total	171	17	2

Sixteen of the 17 with leptospiral agglutinins had antibodies to *L. australis A* or the "Esposito" strain; the other had antibodies to *L. hyos.* One serum with agglutinins to *L. australis A* had a titre of 1:100 to *L. australis B;* another with a titre of 1:100 to "Esposito" had titres of 1:100 and 1:30 with

L. icterohaemorrhagiae and *L. canicola*. Most of the titres were low, but the fact that in the younger age group (8-16 years) 10 per cent. of the sera had some evidence of possible previous infection. This suggests that some of the pyrexias occurring in that area may be due to leptospirosis.

(*e*) *Leptospiral Infections in Animals in North Queensland.*

The search for animal reservoirs of leptospirosis in North Queensland has continued in conjunction with members of the Field Station of the Queensland Institute of Medical Research at Innisfail. The interpretation of the serological results is difficult and the same limitations in last years' report again apply. Leptospirae were isolated from 31 animals and agglutination-lysis titres of 1:100 or greater were detected in 251 of 829 sera. A summary of this work is set out hereunder.

Rodents—

Rattus rattus: 191 examined. *L. australis B* isolated from 2, *L. canicola* from 1. Serology: probable *canicola,* 1 (proven by culture); probable *australis B,* 8 (including the 2 proven by culture); probable *australis A,* 4; probable *pomona,* 7 (all from Mossman); possible *grippotyphosa,* 3 (all from Mossman).

Rattus norvegicus: 7 examined. *L. australis B* isolated from 5; leptospirae seen in one other, but culture lost; serological evidence of infection with *australis B* in this and the remaining rat. *L. australis B* was also isolated from the only two *R. norvegicus* examined previously.

Rattus conatus: 31 examined. *L. australis A* isolated from 8, *L. australis* B from 1; leptospirae seen in one other, but not isolated. Serology: probable *australis A*, 14 (including the 8 proven by culture, and the one in which leptospirae seen but not identified); insignificant reaction only in rat infected with *australis B.*

Rattus assimilis: 14 examined. *Leptospirae* seen in one, but not isolated. Serology: probable *hyos,* 1 (that in which leptospirae seen), probable *pomona,* 1.

Mus musculus: 71 examined. *L. australis B* isolated from 7, *L. australis A* from 1; leptospirae seen in one, but not isloated. Serology: In addition to homologous reactions in mice with proven infections, the mouse in which leptospirae were seen but not isolated had a titre of 1 : 300 for *australis B* and one mouse with *australis B* also had a titre of 1 : 300 for *australis A.*

Melomys spp.: 128 examined. *L. canicola* isolated from one (*M. littoralis*) with the following remarkable serology: *icterohaemorrhagiae* 1:100, *canicola* 1:100, *australis B* 1:300, "Robinson" 1:100, *celledoni* 1:10,000. This is the only infection encountered in 152 *Melomys* examined since the work began.

Hydromys chrysogaster: 29 examined. No leptospirae isolated. Serology: Probable *australis B,* 4; probable *australis A,* 3; probable *hyos,* 2.

Uromys caudimaculatus: 2 examined. No leptospirae isolated. Sera negative.

Unidentified rats: 2 examined. No leptospirae isolated. Sera negative.

Bats.—

Pteropus conspicillatus: 21 examined. No leptospirae isolated. Serology of 15: probable *australis A,* 2.

Miniopterus blepotis (2), *Rhinolophus megaphyllus* (3), *Hipposideros bicolor albanensis* (4), *Nyctophilus bifax* (1), *Nyctinomus loriae* (1): no leptospirae isolated. Sera of 9 negative.

Marsupials.—

Perameles nasuta: 19 Examined. A *leptospira* of *hebdomadis* group isolated from 1. Serology titres of 1:100 or greater present in 13, with many indications of mixed infections; probable *canicola,* 2; probable *australis B,* 5; probable *australis A,* 6; *hebdomadis group,* 4; probable *hyos,* 1; probable *celledoni,* 2.

Thylacis obesulus: 223 examined. *L. canicola* isolated from 2, *L. australis A* from 1; *L celledoni* from 1. Serology: titres of 1:100 or greater present in 111, with many indications of mixed infections; probable and possible *canicola,* 40 (including the 2 proven by culture); probable *australis B,* 23; probable *australis A,* 33 (including the 1 proven by culture); probable *pomona,* 11 (all but 1 from Mossman); *hebdomadis* group, 22; probable *celledoni,* 4 (including the one proven by culture).

Dendrolagus lumholtzi: 1 examined. No leptospirae isolated. Serum negative.

Thylogale stigmaticus: 1 examined. No leptospirae isolated. Serology: *grippotyphosa* 1:100.

Bird.—

Hypotaenidia philippensis: 1 examined. No leptospirae isolated. Serum negative.

Reptiles.—

Egernia major: 3 examined. No leptospirae isolated. Serology: *australis A* 1:10 in 1.

Domestic Animals.—

Sera only were available from most of these groups. Interpretation of results is even more difficult than in the rodents and bandicoots.

Pigs: 53 examined (of which 13 were wild). Serology: possible *icterohaemorrhagiae,* 5 (all from Mossman); possible *canicola,* 1, probable *australis B,* 3; probable *australis A,* 2, possible 4; probable *pomona,* 9; probable *hyos,* 1.

Cattle: 106 examined. Serological results available for 63; possible *icterohaemorrhagiae,* 1; possible *canicola,* 1; probable *australis B,* 3; probable *pomona,* 28; probable *hebdomadis* group. 1, possible 8; probable *hyos,* 11, probable and possible *celledoni,* 6.

Sheep: 7 examined. Serology: probable *australias B,* 1; probable *pomona,* 2.

Although this work is incomplete certain general facts are emerging. The introduced rodents, *R. rattus* and *M. musculus,* are good hosts for *L. australis B,* and highly successful colonizers of towns and fields; they are the chief reservoirs of this serotype. *R. norvegicus* is at least as good a host as the others, but it is not successful in the north, and seems to be limited to small populations in towns. On the other hand, the field rat, *R. conatus,* is the principal reservoir of *L. australis A.* The allied rat of the rain forest, *R. assimilis,* water rat, *H. chrysogaster,* and climbing rats, *Melomys* spp., are probably of minor epidemological importance.

Marsupials, especially the bandicoots, *T. obesulus* and *P. nasuta,* seem to be the local reservoirs of *L. canicola,* the *hebdomadis* group and *L. celledoni,* while pigs and cattle, as in the south, are probably the main source of *L. pomona* and *L. hyos.* No clear indications have been found of the local hosts of *L. icterohaemorrhagiae* and *L. grippotyphosa.*

(*f*) *The Sensitised Erythrocyte Lysis Test.*

Further experience has been gained in the use of S.E.L. test for demonstrating antibodies against various strains of leptospirae in animal sera. A total of 142 animal sera from rats, dogs, pigs, and a horse were examined by both the agglutination-lysis and the sensitized erythrocyte lysis test using *L. australis A* as the source of E.S.S. The agglutination-lysis test was regarded as being positive if the titre was 1:100 or greater and the S.E.L. test as positive with a titre of 1:10 or greater. Complete agreement was recorded between the results of the two tests in 88·7 per cent. of the sera.

One hundred and twenty-five bandicoot sera, however, of which 86 were positive in the agglutination-lysis test failed to produce a positive S.E.L. test. Ten of these bandicoot sera, 5 having had positive agglutination-lysis titres of 1:1,000 or greater, were retested using an E.S.S. prepared from *L. biflexa.* (This antigen was made available by courtesy of Dr. C. D. Cox of the Department of Microbiology and Public Health, University of South Dakota). The antigen was diluted to contain 128 units as recommended by Cox but no positive reactions were obtained. This persistent failure of bandicoot sera to react with the S.E.L. test is an interesting phenomenon. The result with the S.E.L. test on these animal sera are set out in Table XCVI.

TABLE XCVI.

COMPARISON OF S.E.L. AND A–L TESTS ON SELECTED ANIMAL SERA.

Species.	Source.	No. Tested.	Positive A–L and S.E.L.	Positive A–L Negative S.E.L.	Negative A–L Positive S.E.L.
Rat	45 ex N.G. 22 ex N.Q.	67	1	2	1
Dog	ex N.G.	67	7	2	8
Pig	ex N.G.	7	2	2	..
Horse	Queensland	1	..	1	..
Bandicoots	1 ex N.G. 124 N.Q.	125	..	86	..
	Total	267	10	93	9

A limited number of tests have been carried out with human sera using the E.S.S. prepared from *L. biflexa.* Using this antigen the S.E.L. test gives close agreement with the A–L test and the antigen appears to be more sensitive and to give higher titres than the E.S.S. prepared from *L. australis A.*

5. RESISTANCE OF STAPHYLOCOCCUS AUREUS TO ANTIBIOTICS.

During the period from January, 1957, to June, 1958, five hundred and eighty-nine strains of haemolytic *Staphylococcus aureus* were isolated from swabs and other specimens submitted to the laboratory. The majority of these cultures were from patients attended by private practitioners in the country and metropolitan area and only a small precentage from country hospitals. The results of the sensitivity tests therefore are representative of the behaviour of staphylococci in the population as a whole rather than in a hospital environment.

The tests were performed on agar plates using "Sentest" bacterial sensitivity test tablets. Two strengths of each of six antibiotics were used and the organism was regarded as being sensitive if a clear zone of inhibition of growth surrounded the tablet containing the lowest strength. These corresponded to penicillin 0.5 I.U., streptomycin 20 microgrammes chloramphenicol 40 microgrammes, aureomycin 10 microgrammes, terramycin 10 microgrammes and erythromycin 1 microgramme.

The results are set out in Table XCVII. It will be observed that 36.8 per cent. of the 589 strains of haemolytic *Staphylococcus aureus* are sensitive to penicillin, 78.6 per cent. to terramycin, 81.3 per cent. to erythromycin, 88.1 per cent. to streptomycin, 92.3 per cent. to aureomycin and 99.5 per cent. to chloramphenicol. It is alarming to consider that 63.2 per cent. of pathogenic staphylococci are resistant to penicillin and this percentage is certainly lower than would be found occurring in hospitals. The need for great discretion in the use of erythromycin is stressed lest resistance to this drug becomes more widespread.

6. TYPING OF SALMONELLA CULTURES.

The continued assistance of Dr. Nancy Atkinson of Adelaide in typing these cultures is greatly appreciated. During the year several types not previously encounted in this laboratory were isolated.

S. dublin: isolated from a man aged 54 with gastroenteritis in Brisbane. This is apparently the first isolation of this strain in Australia.

S. organienberg: from a man of 61 in Brisbane with severe gastroenteritis necessitating hospitalisation for 3 weeks.

S. adelaide from a male infant of 2 years with acute gastroenteritis.

S. bareilly: isolated from cocoaunt. This strain is apparently endemic in Queensland. Dr. Atkinson reports having previously received 3 human strains from Brisbane and 11 from animals, especially chickens, in Queensland.

S. potsdam: isolated from sausage.

Several further *salmonella* cultures isolated during the year are awaiting typing.

7. Tuberculosis Laboratory.

A total of 17,989 tests has been performed in this unit during the year, an increase of 45 per cent. on the total for the previous year. This increase has mainly been due to additional sputum specimens submitted for microscopic examination and culture. One culture only was identified as a bovine strain and this was isolated from a 29 year old slaughterman from Brisbane, whose task it was to destroy carcasses.

An investigation was made into the use of various Silicones as defrothing agents for use during the processing of specimens prior to culture. It was found that "Silicone 60" was effective as a defrothing agent, would withstand autoclaving and was not lethal for *M. tuberculosis* even after exposure for 5 hours in a 3·2 per cent. concentration.

A further study was made of the efficiency of 10 per cent. hydrous trisodium phosphate as a transport medium for both sputum and gastric lavage specimens. The number of specimens tested so far are not sufficiently large for final analysis.

Sensitivity tests are still being performed on all cultures from newly diagnosed cases of tuberculosis.

With the introduction of compulsory X-ray examination of the populace it may be anticipated that the demand on the laboratory will increase and it is possible that additional staff may later be necessary.

TABLE XCVII.

Sensitivity of Haemolytic *Staphylococcus aureus* to Six Antibiotics.

(1–1–57—30–6–58.)

Source.	No. of Cultures Tested.	Penicillin.	Streptomycin.	Chloramphenicol	Aureomycin.	Terramycin.	Erythromycin.
Pus (Swabs, Wounds, etc)	306	96	282	305	286	249	286
Urine	140	53	105	138	120	89	77
Ear	21	8	20	21	21	19	20
Eye	22	8	20	22	21	17	22
Sputum	65	31	63	65	64	59	60
Nose, Throat ..	18	10	18	18	18	18	17
Urethra	1	..	..	1	..	..	1
Cervix, Vagina ..	16	11	11	16	14	12	15
Total of all Sources	589	217 (36·8%)	519 (88·1%)	586 (99·5%)	544 (92·3%)	463 (78.6%)	489 (81·3%)

8. Study of Resected Lung Tissues.

The pathological study of resected tuberculous lung tissue has continued. So far 41 specimens have been received. In 22 of these cavity formation was observed and in three, healed cavities were present. Not all the specimens could be examined bacteriologically owing to fixation in formalin prior to receipt in the laboratory.

Of the 27 specimens in which bacteriological examination is complete acid-fast bacilli were seen in both concentrated smear and sections in 44 per cent., by smear alone in 15 per cent. and in sections alone in 22 per cent. *M. tuberculosis* were grown in only 18 per cent. and all were found to be pathogenic for guinea-pigs. The organisms were all partially resistant to streptomycin and isonicotinic acid anhydrazide but only one showed a slight degree of resistance to paraminosalicylic acid. This study is continuing.

9. M. Ulcerans.

Mycobacterium ulcerans was isolated from tissue excised from an ulcer on the left hand of a white male aged 48 years residing in Maryborough. The tissue was injected into the foot pads of mice and this, after an interval of several weeks led to localised swelling and ulceration. Numerous acid-fast bacilli were found in the tissue and the histological lesion was characteristic.

Primary inoculation of the material onto Lowenstein-Jensen medium, incubated at 33 deg. C. produced an extremely poor growth of acid-fast bacilli. When a suspension of this culture was injected into the foot pads of mice the typical swelling and ulceration of the tissues first became apparent after one week.

10. "Milkers Nodule."

The skin lesion known as "Milkers nodule" is not widely known nor has it been described in Australia. It is thought by many to be due to a virus allied to but distinct from cowpox and vaccinia. It is characterised by its clinical appearance and lack of systemic effects, its duration of 6-10 weeks and healing without scar formation. There is no cross-immunity with vaccinia.

A total of nine cases has been collected from the histological files at this laboratory during the period 1954-57. The diagnosis was made histologically in conjunction with the clinical details and a history of contact with cows was available in most cases. An attempt was made to obtain material for virus isolation from a herd of cows in the Kingaroy district but this was unsuccessful owing to the lesions being almost completely healed at the time of observation.

11. Psittacosis—A Case in Bundaberg.

In October, 1957, a man aged 36 years living in Bundaberg developed an influenza-like disease with respiratory symptoms, muscle and joint pains, headache and giddiness. The tentative diagnosis of psittacosis was confirmed by a complement fixation titre of 1 :32 on the fifteenth day of the disease. The patient kept 250 budgerigars at his home.

12. Exfoliative Cytology.

The work in this field has more than doubled during the past year, the number of specimens examined increasing from 415 in 1956-57 to 1,113 in 1957-58. From now on there should be some decrease in the work as specimens from the Repatriation General Hospital can now be examined and reported on there. The great increase in the number of patients investigated has produced a greater number of cases of carcinoma of the lung; a proportional increase but nevertheless sufficiently high to make the increased work worthwhile.

Table XCVIII. shows a comparison of the diagnoses made in 1956-57 and in 1957-58 and also indicates that more specimens per patient have been received for examination—an average of 2·7 in 1956-57 and on 3·1 in 1957-58.

TABLE XCVIII.

COMPARISON OF THE DIAGNOSES MADE IN 1956–57 AND 1957–58.

Diagnosis.	1956–57.		1957–58.	
	Specimens.	Cases.	Specimens.	Cases.
Negative	282	..	886	274
Suspicious	17	..	41	30
Positive	59 (14·3%)	24 (15·9%)	93 (8·3%)	46 (12·9%)
Unsatisfactory	57	..	93	6
Total	415	151	1,113	356

Some of the earlier cases investigated had been followed up and Table XCIX. summarises the results obtained so far. A follow-up diagnosis of "probable carcinoma" has been reserved for cases where histological or definite macroscopic evidence at thoracotomy is unavailable to support the diagnosis. Cases labelled as "undiagnosed" also include those who have been lost to observation and those for whom no reply to the follow-up letter has been received. It will be seen that out of 175 cases in which a definite diagnosis has been made and in which a satisfactory specimen was received 50 (29 per cent.) were suffering from probable or proven carcinoma. Of these cases a definite cytological diagnosis of malignancy was made in 26 cases—52 per cent. of carcinoma patients. To date it appears that no falsely positive diagnoses of malignancy have been made.

TABLE XCIX.

Cytological Diagnosis.	Follow-Up Diagnosis.				
	Non-Malignant.	Probable Carcinoma.	Carcinoma.	Undiagnosed.	Total.
Negative	111	8	13	11	143
Suspicious	14	1	2	1	18
Positive	0	8	18	3	29
Unsatisfactory	1	1	1	0	3
Total	126	18	34	15	193

13. CITY MORGUE.

As noted in the statistical summary the number of post-mortem examinations has increased from 587 in 1956-57 to 652 in 1957-58 thus maintaining the steady upward trend which has been apparent for many years. Each year the inadequacies of the present building become more obvious and this has been noted particularly during the present year when for the first time attendance at medico-legal autopsies has become a required part of the medical curriculum. Under existing conditions no more than two students can be accommodated at any one time and this has made the whole course of instruction very protracted and in many cases has interfered with other lectures or demonstrations. The extreme difficulty encountered in the preparation and photography of suitable teaching specimens has also militated against the effective teaching of forensic pathology.

It is encouraging to know that there is evidence of activity in the planning of a new Morgue. The preliminary plans which have been produced by the Architectural Branch of the Public Works Department indicate that a satisfactory building will be erected which will provide optimum conditions for the practice of forensic medicine in the City of Brisbane.

14. PUBLICATIONS.

Sharp, C.F.: "Laboratory Diagnosis of Leptospirosis with the Sensitized Erythrocyte Lysis Test" (in the press).

*Tonge, J. I. (1957): "Gas Gangrene Following the Injection of Adrenaline in Oil", M.J. Aust. 2, 936.

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*Previously reported as in the Press.

GOVERNMENT CHEMICAL LABORATORY, 1957-58.

Government Analyst and Chief Inspector of Explosives:
S. B. WATKINS, M.Sc., F.R.A.C.I.

Deputy Government Analyst and Inspector of Explosives:
A. S. HURWOOD, B.Sc., F.R.A.C.I., A.R.I.C.

FUNCTION AND SERVICE.

The Government Chemical Laboratory provides a co-ordinated chemical service for all Queensland Government Departments with the exception of the Department of Agriculture and Stock which has its own chemical service. The Railway Department maintains a chemical service though this Department consults the Government Analyst on the nature of goods for the purpose of classification under their by-laws appertaining to the carriage of goods. The laboratory also examines textiles for the Railway Comptroller of Stores.

In Queensland the laboratory also gives service to Commonwealth Government Departments. The Commonwealth Department of Customs and Excise makes the largest demand for service while the Department of Primary Industries requires the examination of a large number of exportable foodstuffs. Other Commonwealth Departments using the laboratory include the Department of Works and Housing (water and sewerage samples) the Postmaster General (battery acids and corrosion problems), the Royal Australian Navy (fuel oils), the Aeronautical Inspection Directorate (oxygen), the Army and the Repatriation Department (foods and drugs).

The following State Departments and semi-governmental authorities required the services of the laboratory:—

Department of Health and Home Affairs,
Department of Mines and the Geological Survey,
The Departments of Lands, Irrigation and Water Supply and Forestry,
Department of Public Works, and the Queensland Housing Commission,
Department of Education,
Department of the Auditor General,
The Commissioner of Police,
The State Stores Board,
The Main Roads Commission,
The Co-ordinator General of Public Works,
The Railway Department,
The Portmaster,
The Department of Harbours and Marine,
The Brisbane and South Coast Hospitals Board and other Hospital Boards.
The medical profession,
The public.

The four separate sections of the Laboratory each in charge of a senior officer were in each case gainfully occupied during the year and covered a wide range of submissions. As usual much advisory work was also included in sectional activities.

ACCOMMODATION.

Accommodation is still heavily taxed and though the space per analyst might appear adequate when assessed on floor space only much bench space is occupied with set up apparatus which effects an all over economy leading to considerable saving of officers' time.

The laboratory hopes this year to acquire further laboratory space for necessary expansion occasioned by increasing demands for water analyses and to meet the work involved in air pollution investigations.

STATISTICS.

The total number of samples which were examined during the year was 21,806. The following table shows how this number compares with that of the previous 9 years.

TABLE C.

Year.	Total Samples.
1948–49	17,564 (Record year)
1949–50	18,840 (Record year)
1950–51	14,137
1951–52	15,657
1952–53	26,091 (Record year)
1953–54	21,894
1954–55	20,905
1955–56	21,178
1956–57	19,927
1957–58	21,806

Table CI. indicates the distribution of the above total between the several sections for this and the past four years.

TABLE CI.

Year.	Section 1.	Section 2.	Section 3.	Section 4.
1953–54	7,762	1,647	4,295	8,190
1954–55	7,397	2,815	4,412	6,281
1955–56	6,690	3,207	3,754	7,527
1956–57	6,731	3,686	4,473	5,037
1957–58	8,269	3,887	4,620	5,030

Table CII. is an analysis of the total number of samples received according to the various departments requiring the service.

TABLE CII.

State Departments :		
Health and Home Affairs	8,893	
Police	337	
Mines	68	
Coal Board	223	
Portmaster	2,311	
Geological Survey	1,092	
Tile Testing Station	264	
Irrigation	1,028	
Local Government	410	
Harbours and Marine	292	
Main Roads	132	
State Stores	482	
Public Works	898	
Housing Commission	525	
Railways	42	
Weights and Measures	76	
Queensland Institute of Medical Research	7	
Others and University 65 and 287	352	
Councils	190	
		17,622
Commonwealth Departments :		
Primary Industry	674	
Customs and Excise	2,266	
Others	376	
		3,316
Hospitals Boards	278	
Medical Profession	119	
Public	471	
		868
Total		21,806

SECTION 1.

FOODS, DRUGS AND WATERS.

A. S. HURWOOD, B.Sc., F.R.A.C.I., A.R.I.C., Deputy Government Analyst, Officer-in-Charge.

Table CIII. gives the number and source of the samples examined.

TABLE CIII.

Department.	No. of Samples.
Health and Home Affairs	5,774
Irrigation and Water Supply	1,019
Local Government	383
Other Government Departments	790
Public	303
Total	8,269

TABLE CIV.

SUMMARY OF SAMPLES OF FOODS AND DRUGS EXAMINED FOR THE DEPARTMENT OF HEALTH AND HOME AFFAIRS.

Nature of Sample.	No. of Samples.
Beverage or Cordial	257
Bread	219
Cereal	42
Condiment	15
Confectionery	81
Crayon or Colour Pencil	221
Disinfectant	52
Drug or Medicine	90
Fish	23
Flock or Fibre	20
Fruit or fruit juice	79
Jam or jelly	23
Meat	115
Milk—official	2,459
Milk—unofficial	94
Milk product	100
Paint or Paint Scraping	633
Spirituous Liquor	39
Tobacco	148
Toy	193
Vegetable	29
Miscellaneous	673
Total	5,605

The miscellaneous samples include mushroom, beer glass, drinking straw, soil, leather, crushed ice, soap wrapper, chicken roll, junket tablet, walnut, peanut, essence, and toilet preparation.

TABLE CV.

DETAILS OF LEGAL SAMPLES TAKEN BY INSPECTORS IN ACCORDANCE WITH THE PROVISIONS OF "THE HEALTH ACTS, 1937 TO 1955":—

Nature of Sample.	Number Examined.	Passed.	Failed.
Milk	2,459	2,201	258
Paint Scraping	301	108	193
Toy	106	4	102
Minced Meat	74	31	43
Sausage	23	20	3
Spirituous Liquor	18	4	14
Bread	6	5	1
Honey	3	1	2
Milk Bottle	1	1	..
Total	2,991	2,375	616

MILK.

Bottled pasteurised milk from Brisbane, Ipswich, Rockhampton, and Cairns was regularly examined and there was frequent sampling of the one-third pint bottles of pasteurised milk issued to State schools under the free milk scheme. The town supply of pasteurised milk showed low level adulteration with water during the first half of the year. Severe drought conditions over this period had adversely affected the milk yield and apparently a few dishonest dealers contributed to the pooled milk at the pasteurisation centres. Freezing points from normal up to –0.53 deg. C. were obtained from the bulk milk indicating an extraneous water content of up to 3 per cent. In the second half of the year with the drought broken and milk plentiful, freezing points were normal and none of the pasteurisd milk samples examined showed any evidence of adulteration.

The number of legal samples of milk received was 2,459, the largest number for ten years and an increase of 897 on last year's total. Most of the milk now consumed is bulk pasteurised and this is seldom adulterated with water to any significant extent. The adulterated samples are mostly raw milks and represent a small proportion only of the total milk consumed. Table CVI shows results of milk analyses from various parts of the State. Judged on the

TABLE CVI.

DETAILS OF LEGAL SAMPLES OF MILK SUBMITTED FOR ANALYSIS.

District.	Total Number of samples.	Number of samples which passed the standard.	Number of watered samples.	Number of samples below the standard in fat (3·3 per cent.) but not watered.	Number of samples below the standard in total solids (12 per cent.) and/or solids not fat (8·5 per cent.) but not watered nor deficient in fat.	Proportion of watered samples. (per cent.)	Average proportion of added water. (per cent.)
Greater Brisbane	1,305	1,238	8	36	23	0·6	3·0
Bowen	41	33	8	Nil	Nil	19·5	11·6
Bundaberg	20	16	3	1	Nil	15·0	7·0
Cairns	90	74	10	5	1	11·1	7·4
Central West	33	18	1	13	1	3·0	6·0
Ipswich	295	250	2	22	21	0·7	2·0
Maryborough	6	4	Nil	2	Nil	Nil	Nil
Mount Isa	25	14	2	3	6	8·0	8·0
North Coast	182	159	10	8	5	5·5	4·2
Rockhampton	69	58	4	6	1	5·8	26·5
South Burnett	22	20	2	Nil	Nil	9·1	18·5
South Coast	160	148	1	9	2	0·6	36·0
Toowoomba	127	109	1	12	5	0·8	2·0
Townsville	84	60	2	13	9	2·4	9·5
Total	2,459	2,201	54	130	74	2·2	8·9

(Summary of Table CVI.)

	Proportion of total number of Samples.
	Per cent.
Samples adulterated with water ..	2·2
Samples deficient in fat but not watered	5·3
Samples below the standard in total solids and/or solids not fat only ..	3·0
Samples which passed the standard ..	89·5
Total ..	100·0

TABLE CVII.

Milk Samples taken in Greater Brisbane Compared with Previous Years.

Year.	Number of Samples.	Proportion of Total Samples.	Proportion Adulterated with Water.
		Per cent.	Per cent.
1950–51	732	43·2	6·5
1951–52	878	41·8	4·3
1952–53	813	42·1	0·7
1953–54	768	37·7	7 7
1954–55	898	51·3	0·9
1955–56	679	41·9	0·9
1956–57	730	46·7	1·9
1957–58	1,305	53·1	0·6

samples submitted the incidence of watered milks was highest at Bowen, Bundaberg and Cairns.

In a partly frozen milk the liquid portion is concentrated in milk constituents and the frozen portion on thawing shows the characteristics of a watered milk. Far too much of the milk sold in the milk bars of Queensland is in a partly frozen state and by serving such milk to the public the proprietor lends himself to prosecution for selling adulterated milk. In his own interest he should rigidly adhere to the Regulation that was introduced for his protection, namely, that, ''milk shall not at anytime be reduced to a temperature lower than 34 degrees Fahrenheit.''

The average fat content of all the milks examined was at the satisfactory high level of 3·99 per cent. compared with 3·93 per cent. last year.

TABLE CVIII.

Showing Milk Analyses Compared with Previous Years.

Year.	Number of Legal Samples.	Percentage showing Deficiency in Fat but not Watered.	Percentage Below the standard in Total Solids and/or Solids not Fat only.	Percentage of Watered Samples.	Added Water (Average per cent.)
1950–51	1,695	9·7	2·7	8·7	8·5
1951–52	2,100	13·7	9·6	8·0	9·5
1952–53	1,934	7·8	3·5	2·8	10·2
1953–54	2,036	11·0	7·5	6·3	9·4
1954–55	1,750	6·4	3·0	3·5	10·2
1955–56	1,621	5·4	1·1	3·7	9·2
1956–57	1,562	6·4	2·8	3·7	7·5
1957–58	2,459	5·3	3·0	2·2	8·9

Meat.

From a total number of 74 legal samples of minced meat, 43 contained the preservative substance, sulphur dioxide, in contravention of the Regulations. To remedy this persistent offence heavier fines and more intensive sampling might have to be considered.

With sausages, on the other hand, few samples failed to conform with official requirements and the quality, in general, was good.

Flour.

The white flour, wholemeal flour, and wholemeal flour mixtures from the several mills in Queensland were examined, and in most cases conformed with relevant standards.

Several samples were chlorine bleached. Such bleaching is now permitted with any variety of flour except that intended for bread making.

Due to drought conditions there was a partial failure of the wheat crop and most of the flour milled in Queensland was made from a mixture of Queensland wheat and wheats of lower gluten content from Victoria and South Australia. The resultant white flour had an average protein content of 11 per cent. Flour milled from Queensland wheat alone averaged 13 per cent. protein and frequently conformed with the standard for protein-enriched flour, which requires a minimum protein content of 15·4 per cent. on the water-free substance.

Bread.

Queensland now controls bread weight on a dry solids basis and under *''The Weights and Measures Act Amendment Act of* 1957'' the dry solids content of a two pound loaf of bread shall be not less than 19·2 oz. with proportionate values for one pound and four pound loaves. Seventy-two (72) sample loaves of bread were examined in connection with this new legislation. Bread surveys were made at Bundaberg, Cairns, Rockhampton, Townsville, Ipswich, and many small country centres and 219 samples in all were examined.

There has been much loose talk and press publicity on the poor quality of Queensland bread but this should be viewed in its true perspective. The experience of this laboratory is that poor quality bread seldom constitutes more than ten per cent. of the whole and this applies to town and country alike. The remainder, for the most part, is of good quality and a credit to the bakers concerned.

The description ''starch reduced'' as applied to bread and flour has long been recognised as misleading and is not now permitted. Under the new Food and Drug Regulations the words ''starch reduced'' or any word or words having a similar import shall not be used orally or in any label or advertisement to describe any bread or any flour defined by these Regulations.

TABLE CIX.

SHOWING THE COMPOSITION OF SOME GENUINE LOCAL FRUIT PRODUCTS.

No. of Analysis.	Fruit Product.		Total Solids. (Per cent.)	Ash. (Per cent.)	Acidity as Citric Acid. (Per cent.)	Phosphoric Acid. (P_2O_5) (Per cent.)	Water Insoluble.) (Per cent.
13	Lemon Juice	Maximum	9·6	0·36	8·5	0·032	..
		Minimum	7·0	0·27	6·0	0·020	..
		Mean	8·5	0·33	6·9	0·027	..
7	Orange Juice	Maximum	12·9	0·58	1·8	0·040	..
		Minimum	8·9	0·27	1·0	0·026	..
		Mean	10·2	0·40	1·5	0·031	..
3	Plums (peeled and seeded) ..	Maximum	17·0	0·60	3·0	0·043	1·1
		Minimum	16·0	0·40	1·2	0·031	1·1
		Mean	16·5	0·49	2·2	0·036	1·1
2	Peaches (peeled and seeded)	Maximum	18·0	0·59	0·8	0·059	1·4
		Minimum	16·0	0·57	0·8	0·057	1·3
		Mean	17·0	0·58	0·8	0·058	1·35
1	Nectarines (peeled and seeded)		21·0	0·66	1·1	0·05	1·1

"Protein-enriched" or "protein-increased" is now the description given to this variety of bread and a minimum standard of 2·7 per cent. nitrogen on the water-free substance is prescribed.

A number of "protein-enriched" loaves was examined, and most of the samples contained the requisite proportion of protein.

ROYAL JELLY CRAZE.

Royal jelly is a secretion of the bee. Samples of this contained in capsules and cosmetics were examined. Each capsule contained 50mg. of royal jelly and the dose recommended was one capsule per day. The cosmetics contained about one per cent. of the jelly.

A 50 mg. dose or a 1 per cent. dose of royal jelly would have a negligible calorific value, a negligible mineral value and a negligible Vitamin B value, and therapeutically would have no value. It is being sold as a "revitalizing cream" which in the doses contained in the face cream would have no value, even if absorbed. Although the claims are misleading the cream itself is harmless as are the preparations by mouth.

DRUGS AND MEDICINES.

The total number examined, exclusive of hospital drugs, was 90.

Drugs were checked for purity and the composition and claims of new proprietary lines of medicine were examined. Most of the samples conformed with official requirements.

Medicines were checked for accuracy of dispensing and complaint samples from the public were investigated. Errors were found in the dispensing of certain eyedrops and in the dispensing of a mercuric chloride lotion. Also with a triple bromide medicine the dose was shown to be excessive.

Negative clinical results from a certain drug in tablet form were shown to be due not to the composition of the drug but to an impervious plastic-like coating of the pill mass which prevented absorption of the drug.

NEW FOOD AND DRUG REGULATIONS.

New Food and Drug Regultions were proclaimed on the 5th December, 1957, those of 1939 being repealed.

TOBACCO.

Contraband cigarettes and smoking tobacco from the Queen's Warehouse were examined for quality and suitability for sale.

Cigarettes and pipe tobacco from the open market were examined for spray residues.

Tender samples of cigarettes and pipe tobacco were examined for the Government storekeeper and advice given as to the most economical lines for use in Government institutions.

In this tobacco section of the work 148 samples in all were examined.

SUMMER DRINKS.

Summer drinks or soft drinks have an enormous sale in Queensland and 257 samples in all were examined.

Summer drink surveys were carried out at Gympie, Gladstone, Rockhampton, Cairns, Bundaberg, Charleville, Maryborough, and numerous small country towns and the standard of the drinks as a whole was not high.

The most surprising feature in the sale of summer drinks is the extraordinarily high consumer demand for the artificially coloured and flavoured imitation drink of doubtful health value, in preference to the naturally coloured and more wholesome genuine fruit drink.

POTATO FLAKES.

Eight different brands of this popular foodstuff were examined with the following results:—

——	Minimum.	Maximum.	Mean.
	(Per cent.)	(Per cent.)	(Per cent.)
Moisture	3·9	6·1	5·0
Fat	31·1	54·1	40·5
Common Salt ..	0·5	3·2	1·7

All brands were genuine and of good quality, and apart from the brand which was misdescribed as "starch reduced" and another which claimed to have been made in highly refined vegetable oil whereas it had been cooked in dripping, the claims advanced for the preparations were reasonable.

HEALTH HAZARD FROM GALVANISED IRON COOKING UTENSILS.

There were several inquiries abbout the use of galvanised iron in cooking utensils. Galvanised iron containers are quite unfit for indiscriminate use as cooking utensils. This laboratory, over the years, has examined a number of cases of food poisoning caused by consumption of foods cooked in galvanised iron containers.

The foodstuff was usually an acid one like jam, sauce, pickles, chutney, fruit and tomato products. Any of these foods on cooking in a galvanised vessel would rapidly attack the zinc lining and so become contaminated with zinc at a level constituting a health risk to the consumer.

With neutral foods there would be little action on the zinc lining and consequently little, if any, health risk. For example, the cooking of prawns in galvanised iron boilers has long been practiced with safety in the industry. Nevertheless it is advisable to keep to cooking utensils of proven worth, namely those composed of aluminium, black iron, tinned iron, stainless steel and certain types of enamel ware and glass ware.

THE SEARCH FOR LEAD.

In an endeavour to keep lead in all its forms away from children, Queensland has "tightened up" on relevant regulations resulting in a record number of submissions of paints, paint scrapings, toys, crayons and coloured pencils for determination of lead content and 1,047 samples in all were examined. The manufacturer has fallen in line with the regulations and there is now practically no lead hazard associated with the use of modern paints in the home. There is, however, a definite health risk from powdering paints in old homes painted at a time when white lead, unfortunately, was the popular and permitted paint pigment.

The sale of lead in toys such as lead soldiers is not permitted in Queensland and harmless substitutes in plastic and hardened zinc are an improvement in every way.

There is now little risk of lead in the toy substance itself, but the paint on the toy all too frequently still contains lead due chiefly to the continued and persistent use of lead chromate and oxides of lead as colouring pigments in the paints. The sooner the paint manufacturer supplies the toy maker with lead free paints the sooner will this lead hazard in toys be eliminated. Most of these toys were manufactured and painted overseas.

An unofficial tolerance of one per cent. total lead (PbO) in the mineral pigment of a paint is at present observed as paint cannot be freed of traces of this substance. Consideration is now being given to altering this unofficial tolerance of lead in paint to one per cent. total lead (PbO) in the dried paint.

Some of the zinc oxide manufactured for paint purposes contains lead in significant proportion. A number of samples of zinc oxide were examined for lead content and investigational work in this direction is still proceeding.

Collapsible lead tubes as found in the home were found in some cases to be carrying tooth paste, cosmetics, adhesives and other preparations. In this respect it is of interest to note that during the year, the first plastic tooth paste container was submitted for examination. Judged by its good quality and design, consideration must now be given to its use.

FRUITS AND VEGETABLES.

In this section of the work apples were tested for arsenic and potatoes, cabbages and tomatoes for spray residues and apart from an excessive amount of gammexane on a consignment of potatoes the results were satisfactory.

There were few complaint samples from the public which is always a good sign as to the condition and quality of a foodstuff.

The experience of this laboratory would indicate that the vast majority of the fruits and vegetables marketed in Queensland are in clean, wholesome condition and free of any significant proportion of insecticidal spray residue.

HIGH STANDARD OF PURITY OF HOSPITAL DRUGS.

Drugs as supplied to the hospitals of Queensland to a record total number of 57 were submitted by the Brisbane and South Coast Hospitals Board. The constant checking of these drugs against official standards assists in keeping the purity of hospital drugs at a high level.

SURVEY SAMPLES OF FOODS AND DRUGS.

Ordinary routine surveys were made of the following foods and drugs:—

Ice cream (77), dessicated cocoanut (53), toilet soap (16), milk flavouring (13), lemon butter (11), beer (9), margarine (8), tea (7), salt (7), canned fruit (6), cocoa powder (5), olive oil (3), and headache powder (3). In general the quality of the several lines was good and few samples failed to conform with official requirements.

WORK FOR MISCELLANEOUS GOVERNMENT DEPARTMENTS.

A large volume of work was carried out for Government Departments other than the Department of Health and Home Affairs. Briefly this work embraced tender and contract samples of foodstuff from the Department of the Army, Air Force and Repatriation, special breads, custard powders and other samples from the Prices Commissioner, loaves of bread from the Weights and Measures Department, drugs from the hospitals, foodstuffs from the Railways for goods classification purposes, apples, beeswax and margarine from the Department of Agriculture and Stock, drinking straws from the Education Department and further submissions from the Police Department, the Government Storekeeper, the Housing Commission, and the University.

MISCELLANEOUS.

A number of comparatively poor quality foodstuffs were examined as to suitability for sale for human consumption. This number included samples of imported walnuts, imported peanuts, imported fish fillets, auction room foodstuffs and samples of wine from the Licensing Branch that had been forfeited to the Crown.

One sample of cocoa powder contained 3 per cent. ferric oxide which was considerably in excess of the prescribed maximum of 0·4 per cent.

Two samples of butter were classified as "dirty" after comparison with the sediment standard discs set out in the C.S.I.R.O. 1951 publication on "Extraneous Matter in Dairy Products."

Twenty (20) samples of flock and fibre were examined against prescribed standards of cleanliness as outlined in "The Bedding and Upholstery Regulations of 1948."

The Kirschner values of the fats from five brands of table margarine varied from 1·2 to 2·4 with a mean of 1·8.

With seven brands of table salt four showed less than 1 part per million of fluorine and three less than 3 parts per million.

There were a few isolated cases of filth in foodstuff, the chief foodstuffs involved being bread and milk.

Drugs (3) were submitted by the Department of Health, Port Moresby, for examination and report and miscellaneous samples (5) were submitted in connection with a case of suspected poisoning at Rabaul.

A large volume of work was carried out for the Brisbane and South Coast Hospitals Board, connected chiefly with drugs, medicines, and foodstuffs.

Of 18 legal samples of rum, gin, whisky, and brandy examined 14 were adulterated with water.

A number of insecticidal preparations were examined under "The Health (Insecticide) Regulations, 1953" and a number of detergents approved for the particular purpose outlined in "The Cafe Regulations of 1955."

A large number of samples, including tank water and house dust were examined in connection with arsenical contamination from a poison train in a northern district.

A fire hazard was shown to exist in the careless use of a popular brand of rabbit poison consisting essentially of a mixture of 4 per cent. phosphorus in molasses. If the preparation were used as directed on the label, any such hazard would be remote.

Work was carried out in an advisory capacity on the proposed uniform Poisons Regulations, the proposed Food and Drug Regulation, the new Queensland Food and Drug Regulations and on numerous other subjects concerning foods and drugs.

Shortage of staff coupled with a near record number of submissions has resulted, at times, in a "pileup" of work with consequent delay in the reporting of samples. Every effort will be made to recruit staff to overcome this but trained staff are not available.

WATERS.

The total number of samples of water analysed during the year was 2,411. Of this total 101 samples for the State and 57 for the Commonwealth were submitted for B.O.D. estimations, in connection with the operation of sewerage installations. The Harbours and Marine submitted 290 samples concerned with a survey of the Brisbane River.

The following table indicates the several Government Departments requiring analyses of water and the number of samples examined for each.

TABLE CX.

Water Source.	*No. of Samples.*
Department of Health and Home Affairs	169
Department of Irrigation and Water Supply	1,019
Department of Local Government ..	383
Department of Harbours and Marine ..	290
Miscellaneous Government Departments	99
Public	293
Sewage—	
State Departments	101
Commonwealth Departments ..	57
Total	2,411

SECTION 2.

TOXICOLOGY, BIOCHEMISTRY, AND INDUSTRIAL HYGIENE.

I. L. B. HENDERSON, B.Sc., Officer-in-Charge

The total number of specimens submitted for examination by the section was 3,887.

POLICE DEPARTMENT.

Specimens submitted by this Department during the year numbered 333, of which 213 were in connection with 88 post-mortem examinations.

Poisons found included barbiturate, (36), arsenic (3), strychnine (2), chlorpromazine (2), diatrin (1), doriden (1), physeptone (1), organic phosphate (1), cyanide (1), paraldehyde (1), chloral (1), pilocarpine (1), and quinidine (1).

The remaining 36 examinations of post-mortem specimens did not disclose any poison. Many of these were routine examinations to exclude the possibility of poison in those cases where the Government Pathologist's preliminary examination did not indicate the cause of death.

A number of suspected animal poisoning were also investigated, arsenic being found in 5 cases and strychnine in 4 cases.

Other specimens examined for this Department included bloods, urines, animal baits, foodstuffs, drugs, medicines and plant material.

BIOCHEMISTRY.

Biochemical specimens are examined from the Laboratory of Micro-Biology and Pathology, the Government Medical Officer, the Queensland Institute for Medical Research, the Director of Industrial Medicine, the Brisbane General Hospital, other hospitals and medical practitioners.

The nature, significance and number of such specimens are shown in the following table:—

TABLE CXI.

Nature of Specimen and Significance.	*Number of Specimens.*
Blood and urine, for alcohol or other drugs	1,100
Blood for carbon monoxide	24
Urine for lead	1,993
Urine for mercury	4
Bone for lead	7
Hair, nail and urine for arsenic	228
Miscellaneous	66
Total	3,422

The table shows a marked increase in the determinations of alcohol in blood and urine specimens, due to increased submissions by the Government Medical Officer, mainly in connection with charges against motorists.

Urinary lead determinations are carried out for hospitals and medical practitioners on request, a special lead free specimen bottle being provided by this laboratory. The majority of these determinations, however, are made in conjunction with the Director of Industrial Medicine in the routine protection of personal engaged in industries where there is a lead hazard.

INDUSTRIAL HYGIENE.

Excluding bio-chemical specimens, the number of samples examined was 132.

Investigations undertaken during the year for the Director of Industrial Medicine included:—

Atmospheric tests in a city bank basement, a theatrette at the Exhibition grounds, a can making factory, a cement works and a city telephone exchange.

Dust surveys in quarries and monumental masons' yards, a soapworks, and in the coal crushing sections of two Brisbane powerhouses.

Possible hazards associated with industrial trichorethylene de-greasing plants.

During the year Mr. G. Lahey visited Sydney, by courtesy of the N.S.W. Department of Public Health, to inquire into some aspects of air pollution investigations.

SECTION 3.

MINES, MINERALOGY, METALLURGY, AND EXPLOSIVES.

V. R. CUNDITH, B.Sc., A.R.A.C.I., A.M. Aust. I.M.M., Officer-in-Charge.

Table CXII. shows the sources of work done by this section and the number of each to account for the total of 4,620.

TABLE CXII.

Department.	Number of Samples.
Geological Survey and Mines Department	1,152
Coal Board	223
Portmaster (Explosives)	2,311
Other Departments (includes 264 tiles)	702
Public	142
Commonwealth Departments	90
Total	4,620

The greater proportion of the dry and wet assay work was in connection with ores of gold, silver, lead, copper, zinc, manganese, cobalt, tungsten, chromium, uranium and other minerals.

In regard to manganese ores some samples showed the presence of barium and lead and the higher recordings for Mn content ranged 50-56 per cent. Two samples assayed 80.0 per cent. MnO_2 (by available oxygen). A sample received for manganese determination yielded:—

	Per cent.
Loss on Ignition	9·6
Silica (SiO_2)	24·7
Copper Oxide (CuO)	1·7
Lead Oxide (PbO)	19·0
Iron Oxide (Fe_2O_3)	2·2
Alumina (Al_2O_3)	14·2
Manganese Dioxide	27·3
	98·7

It is usual to classify the manganese dioxide used as a depolariser in dry cells as one of the following groups:—

(1) Ores used without treatment—except grinding, e.g. the battery ore of the Gold Coast.

(2) Ores activated by simple chemical or physical methods.

(3) Artificial oxides prepared chemically from low grade manganese deposits.

In regard to suitable ore, the crystal form and the proportion of predominating tetravalent oxides present such as the allotropic forms of MnO_2—cryptomelane, pyrolusite and ramsdellite are the most important factors. Chemical MnO_2 used with graphite for dry batteries is quoted at £14 per ton.

In respect of psilomelane, the hard tough variety is used for metallurgical purposes. Both bivalent and quadrivalent manganese are present, partly hydrated and the proportion of active oxygen is much lower than pyrolusite.

The prices are on a sliding scale of Mn content and rates subject to silica, iron and phosphorus contents.

Fire tests were made on clays to determine their suitability for the manufacture of tiles, bricks and refractories.

GOLD AND SILVER ORES.

Test drilling in the Charters Towers district to prove extension of the lode, yielded the greater proportion of samples for gold and silver with a number of determinations of zinc and copper on the drillings as well.

A sample of semi sulphide ore yielding: gold 22 oz. 4 dwt. per ton and silver 3 oz. 8 dwt. per ton was given the following tests to determine a suitable method for extracting the gold.

The sample was divided into 2 parts A and B and these crushed separately, one comparatively coarse, the other very fine.

RESULTS.

Screen No. B.S.S.	A.	B.
	Per cent.	Per cent.
+ 44	1·6	. .
+ 52	3·1	. .
+ 72	26·8	. .
+100	14·4	. .
+150	15·6	7·2
+200	15·0	18·0
−200	23·5	74·8

An assay made of the three fractions of B showed:—

The 7.2 per cent. fraction contained 26 per cent. of the total gold.

The 18.0 per cent. fraction contained 15.5 per cent. of the total gold.

The 74.8 per cent. fraction contained 58.5 per cent. of the total gold.

AMALGAMATION TESTS ON A AND B.

Test.	Sample.	Treatment.	Gold Recovery.
			Per cent.
1	A	Amalgamation . .	66 (Hg floured)
2	A	Sodium amalgam	71
3	B	Sodium amalgam	84
4	A	Ore roasted 1 hour at 550°C, water, lime water wash then amalgamated	81 (Hg bright)
5	B	ditto . .	93·0 (Hg bright)

The residues from the amalgamation tests were then agitated for 24 hrs. with 0·05 per cent. KCN (pulp ratio 1 : 3.)

RESULTS.

RESIDUES FROM THE CYANIDATION TREATMENT YIELDED.

——	Gold.	Per cent. Extraction. (Amalgamation and Cyanidation).
	oz. per ton.	
1	1·76	91·6
2	1·41	94·0
3	0·84	95·0
4	1·20	95·0
5	0·44	98·0

As Test No. 5 indicates an extraction of 98 per cent. by amalgamation and cyanidation crushing the ore to ¼ in., roasting for 1 hour at dull read heat, crushing to — 100 mesh with subsequent amalgamation and agitation cyanidation should give an excellent recovery.

For a small tonnage tabling and disposal of the concentrates may be the better proposition.

The following results were obtained on the minerals submitted for analysis:—

	Per cent.
Monazite—	
Thoria	6·6
Rare Earths	59·0
Chrome Spinel (Picotite)—	
Silica (SiO_2)	3·7
Alumina (Al_2O_3)	26·0
Ferrous Oxide (FeO)	17·0
Chromic Oxide (Cr_2O_3)	34·1
Magnesia (MgO)	17·5

Ilmenite—Sample.	(1)	(2)	(3)	(4)
	Per cent.	Per cent.	Per cent.	Per cent.
Titanium Dioxide (TiO_2)	52·9	50·1	52·5	50·7
Ferrous Oxide (FeO)	22·1	22·5	27·3	27·9
Ferric Oxide (Fe_2O_3)	18·8	20·0	17·5	19·1
Chromic Oxide (Cr_2O_3)	2·2	3·8	1·5	1·8
Silica (SiO_2) . .	0·4	0·5	0·8	0·4

In some instances the Cr_2O_3 contents of some ilmenites submitted for assay were found to be lower than 0·01 per cent.

GASES IN COAL MINES.

Complaints arising with the presence of sulphuretted hydrogen in working places were investigated at the coal mines and in all cases concentrations were well below the accepted permissible concentration of 20 parts per million for prolonged exposure.

The test for this gas is best done on the spot as traces are likely to oxidise in the presence of moisture in the sample bottle.

Visits were made to Amberfield, Ebbw Vale No. 3, Westfalen and Haighmoor collieries in connection with check tests for carbon monoxide, methane or sulphuretted hydrogen.

Methane was determined with a Riken Gas Indicator. The measuring principle of this apparatus is based on the interference of light through different media and the methane readings on the scale depend on the differences of the indices of refraction of the methane air mixtures compared with that of fresh air. Beams of light pass through the chambers housing the sample and air, using prisms and reflecting surfaces.

Carbon monoxide was determined with a M.S.A. hand operated indicator.

In connection with the use of M.S.A. CO detectors, the ammonium molybdate in the indicator, renders it sensitive to H_2S, and a blackening occurs.

COAL.

The coal and coke work (928 samples) has increased to such an extent as to require the full time employment of a supervising chemist (Mr. Mathers), two analysts, a cadet and an attendant, who was recently appointed to handle the crushing and sampling of ores and coal as well as to assist in the washability tests.

Samples were submitted for calorific value, agglutination and swelling index tests, proximate and ultimate analyses, fusion point of ash and specific gravity.

In addition the washability tests involve lengthy operations on bulk-coal samples and the subsequent separation, washing and drying of the various gravity fractions for analysis.

The receipt of a calculating machine has enabled the saving of much time in the calculations and checks in connection with the analyses.

ANALYSIS OF KIANGA COAL.

Sample as received—	
	Per cent.
Surface moisture	2·6
Air-dried Sample—	
Proximate Analysis—	
Moisture at 105°C (Per cent.)	3·59
Volatile Matter	33·86
Fixed Carbon	54·90
Ash	7·65
	100.0
Calorific Value—	
British Thermal Units per lb.	13,300
	Per cent.
Sulphur (S)	0·52
Ultimate analysis (dry basis)—	
	Per cent.
Carbon (C)	77·26
Hydrogen (H)	4·97
Nitrogen (N)	1·71
Sulphur (S)	0·54
Oxygen (by diff.)	7·58
Ash	7·94
	100·00

The coal is from the Dawson Valley area from which coal is to be supplied for export.

Accommodation.

Accommodation for the coal work leaves much to be desired. Work is frequently held up by inclemency of weather and inability to dry the samples.

It is understood that the crushing room buildings are to be demolished to make way for a road along the river bank to Margaret Street.

It is hoped that better quarters can be available and ready for the transfer and housing of crushing machinery and drying equipment, etc.

OTHER DEPARTMENTS.

The consultative and analytical work from Government departments, covered a range of industrial products, solder, glass, filter alum, concrete tiles, fibrous plaster, battery acid, boiler scale, corrosion products, galvanised iron, enamel ware, pozzolan and reactivity tests, Golden Casket discs, metals, etc. These indicate the diversity of samples handled.

The bulk of the concrete samples was for the Department of Local Government in connection with investigations into the action of aggressive town water supplies and problems of sewage disposal.

This includes the conditioning of filter sands and screening tests made on filter sands and sands for concrete work.

The colouring matter of 264 concrete tiles submitted for test conformed with the Specification.

Supplies of aviation oxygen from the R.A.A.F. were tested to determine agreement with Specification.

The Golden Casket discs are received for calibration.

A general hospital steriliser and a pressure cooker were tested to determine their efficiencies. Pressure cookers have been found quite satisfactory for use as sterilisers. A temperature of 120 deg. C. can be maintained indefinitely.

Cement Grout Test.

An experiment to determine the effect of pouring a cement grout (1 bag cement, 6 gals. water) into water simulating conditions similar to those obtaining in cementing a collar around the top section of a bore-casing showed the formation of three (3) zones grading into one another.

Zone (1).—The top zone was soft and without strength.

Zone (2).—The middle zone had set hard.

Zone (3).—The bottom zone was crumbly and poorly compacted.

Settlement had occurred according to particle size, the final settlement of fines included calcium carbonate obtained through carbonation of soluble Ca(OH).

ANALYSES.

	TOP (Zone 1)	MIDDLE (Zone 2)	BOTTOM (Zone 3)
	Per cent.	Per cent.	Per cent.
Total loss on Ignition	32·2	15·2	22·9
Insolubles	0·7	0·5	0·8
Soluble Silica	13·7	19·7	17·1
Soluble Iron Oxide	1·3	1·8	1·8
Soluble Alumina	4·2	5·3	4·5
Soluble Lime	44·4	54·2	49·9
Soluble Magnesia	1·2	1·4	1·4
Soluble Sulphur Trioxide	1·8	1·1	1·4
	99·5	99·2	99·8
pH	11	11	11
Condition	Soft carbonated	Set hard	Friable

Zone (3) was friable. The coarser particles and poor compaction together with slower hydrolysis and hydration of the cement particles caused weakness. As this method entails too great a dilution and disturbance of the mix the adherence to the tremie method was advised.

Tinned Fruit.

ANALYSES. HEAD SPACE GAS.

	A.	B.	C.
Carbon dioxide, per cent.	7	7	11
Oxygen, per cent. . .	Nil	Nil	Nil
Hydrogen, per cent.	58	37	8
Nitrogen, per cent.	35	56	81
pH of juice	4	4	4
Condition of can . .	soft swell	springer	flat
Condition of fruit . .	poor	poor	good

No organisms were grown either anaerobically or aerobically after 120 hours incubation.

The blown cans showed internal corrosion along body seam where the tin plate was absent.

Automatic Telephone Equipment.

An examination of this equipment followed tests undertaken by the Superintending Engineer, G.P.O., to determine the effect on performance of a test unit under controlled temperatures and humidities. The tests were then taken to failure in moisture saturated atmosphere at temperatures around 110 deg. F.

The unit was examined at this Department to identify materials of construction and furnish a rating relative to their resistance to corrosion under the above conditions.

CORROSION RESISTANCE.
METAL.

Excellent—
- (1) Platinum, silver contacts.
- (2) German silver.
- (3) Nickel plated brass.
- (4) Brass or bronze.
- (5) Plastic coated Cd plated iron.

Good—
- (1) Nickel plated iron—some small rust spots.
- (2) Grey coloured lacquered iron frame—some rust spots.

Fair—
- Aluminium silver alloy (platform and magnet mounting—some Al_2O_3 present).
- Aluminium plates (uniselector control bank).
- Cadium plated steel—not used much.

Poor Resistance—
- Zinc coated iron screws and units.

Solder was generally good although a white incrustation from flux was present in some instances.

Drops of condensate carrying basic zinc carbonate and rust had fallen on the more vital working parts, e.g., contacts.

The vulnerable parts although not vital to the working of the unit, were found to shed corrosion product in to more vital mechanisms.

The parts of poor resistance such as Al alloy, sherardised iron could be plastic coated where magnetic properties do not suffer—water repellent silicone might be used.

Textile coated cable should be replaced with P.V.C., P.V.A. or Melamine formaldehyde—coatings incorporating a fungicide.

Refrigerator.

An examination of a shop refrigerator jacketed with methylated alcohol water mixtures showed foodstuffs such as ice cream and jellies tainted with methylated alcohol vapour—due to leakage.

A test showed the absence of any explosive vapour air mixture.

The use of glycerol water mixtures would be the better and safer proposition.

An explosion in a ship's refrigerator hold was found to be due to ignition of a vapour air mixture. A flammable solvent had been used in the rubber base preparation for compounding the cork insulation.

Fuel Tanks.

During the year some fuel tanks were examined for the Navigation Department to determine the presence of toxic or dangerous proportions of inflammable vapour, prior to entry for cleaning or repairs.

Use of Fork Lifts in Ships.

An investigation into the quality of air obtaining during the use of a petrol fuelled fork lift for stacking cartons in a ship's hold showed the proportions of carbon monoxide to range beyond a safe limit. The volume of the hold was 55,000 cubic feet.

The fitting of a snorkel to discharge the exhaust gas above head level and the installation of a blower on deck to deliver fresh air by means of a canvas chute to within 5 feet of the floor reduced the concentrations of carbon monoxide to well below toxic levels.

The capacity of the blower was 6,000 cubic feet per minute and with a linear velocity of about 2,410 feet per minute it induced a good updraught through the hatch.

Fumigation of Houses with Methyl Bromide.

In January, 1958, the Queensland Housing Commission, in association with a firm of fumigation contractors, commenced a particularly heavy programme in the fumigation of 2,343 Commission homes with methyl bromide to exterminate the European pine borer introduced from Europe in the timber of imported houses.

Up to date over 779 houses have been treated with methyl bromide vapour under polythene envelopes, the dosage being 4 lb. per 1,000 cubic feet.

Officers of this Department have been seconded to the Housing Commission to check and certify dwellings as safe for re-occupation after fumigation and aeration.

SECTION 4.

FEDERAL DEPARTMENTS, STATE STORES, MAIN ROADS AND PUBLIC WORKS, ETC.

J. ADAMSON, A.R.A.C.I., Senior Chemist,
Officer-in-Charge.

The number of samples examined by the officers of this section was almost the same as in the previous year. The prolonged drought and the collapse of overseas markets again adversely affected the number of samples examined for the Commonwealth Department of Primary Industry.

The following table gives in detail the samples examined by this section:—

TABLE CXIII.

Customs and Excise	1,945
Primary Industry	674
Public Works Department	877
Housing Commission	511
State Stores Board	465
Main Roads Department	125
Explosives (Fireworks)	320
Other Government Departments	95
Public	18
Total	5,030

Commonwealth Departments, as in previous years, provided the bulk of the work carried out in this section. The samples submitted by these departments are exceedingly diverse and cover all materials imported into the country as well as all exported primary products. The samples from the Customs and Excise Departments are chiefly concerned with classification for duty purposes, while the samples from the Department of Primary Industry are chiefly concerned with the maintenance of export standards. The Public Works Department and the Housing Commission again submitted a large number of paints for analysis to ascertain whether they conformed with departmental specifications. The continual checkings of these paints ensure that only paints of good quality are supplied to these departments and that paints supplied to private contractors for use on government buildings are also of satisfactory quality.

The State Stores Board again submitted a wide range of samples for examination and evaluation. They included, amongst other things, textiles of all kinds, inks, detergents, insecticides, soaps, cordials, disinfectants, etc. The number of delivery samples submitted by the board has decreased considerably in recent years.

Bitumen, bitumen emulsions, tars and other roadmaking materials were examined for the Main Roads Department.

Imported fireworks were again examined by this section and none of the imports contravened the regulations of the Explosive Act.

The room in which paint analyses and bitumen testing is carried out is inadequate for this type of work. It is too small, and has insufficient fume cupboard space. The inflammable nature of the material examined and of the substances used in their examination constitute a hazard to the health and safety of the analysts concerned. The smallness of the room also greatly retards rate of work as much time has to be spent in assembling and dismantling apparatus.

DIVISION OF NURSING.

Adviser in Nursing: D. Bardsley, F.C.N.A., R.A.N.F.

Introduction.

The permanent appointment of Miss D. Bardsley as Adviser in Nursing, Division of Nursing, Department of Health and Home Affairs, was gazetted on December 14th, 1957, following her service of four years and ten months (from 14-2-1953) as Adviser in Nursing seconded from the Maternal and Child Welfare Service.

It is of interest to note that the original responsibilities assigned to the Division of Nursing (see Annual Report 1953-54) covered a survey of the living and working conditions of matrons and nursing staffs in Queensland public hospitals, training school accommodation and equipment, medical care, diet, and staff and training school records. Accommodation and equipment for recreation for nursing staffs were also noted.

The visits paid to training schools and other hospitals all over the State which were made by the Adviser in pursuance of these responsibilities were followed by a series of reports to the Department. This has resulted in action by the Boards to improve nurses' conditions and the organisation of training programmes within the means at their disposal.

The contacts with medical superintendents and matrons and other hospital staffs made during these visits and since, together with active participation by the Adviser in the annual conferences of the Matrons' Association have demonstrated the value of the Division of Nursing to the administrative officers of hospitals.

When the Salk Vaccination Campaign was about to commence in June, 1956, the Adviser was co-opted to the administrative staff of the Campaign with special reference to the supervision of the nursing staffs involved both permanent and temporary.

When the School Health Services were about to resume their normal programme towards the close of the original Salk Campaign the Adviser assisted both with planning and tuition in the short Public Health Course arranged for School Health Sisters who had been appointed to the permanent staff of the Service while the Campaign was in progress and had therefore received no instruction in School Health work.

The Salk Vaccination Campaign showed the ability of the School Health nursing service to change at short notice from its established routine and carry out effectively an immunisation programme covering the whole of the State and involving, not only many unforeseen problems both official and personal, but the necessity to carry out team work with unfamiliar teams.

At the same time the temporary cessation of the normal work of the School Health medical and nursing services which had been carried on in this State continuously since 1911 made the school authorities realise the value of that work in maintaining the health of the children under their care and to appreciate its resumption when the sisters were released from the Salk Campaign.

In the process of maintaining the nursing staffs of the Salk Vaccination Campaign at full strength and also replacing permanent School Health sisters as vacancies occurred, the Adviser was called upon to interview a large number of nurses who had expressed themselves as interested in obtaining public health positions. It became increasingly obvious that the majority of them were not even remotely aware of the demands of public health nursing either as to the professional qualifications required or of the work itself and had vaguely considered public health nursing as requiring a minimum of experience or alternatively a means by which they could work day-time hours only and live in their own homes.

This attitude is unfortunately more the rule than the exception, in medical and official circles as well as among nurses themselves, and public health authorities both in Australia and overseas are concerned that the emphasis in the past solely on the curative aspect of nursing has resulted, in this country, as in others, on the domination of the whole of the basic nursing curriculum by the hospital and its varied activities.

It has been pointed out that although the popular meaning given to the word "nursing" is care for the sick with the intention of relieving their discomfort and restoring them to health, this cannot be done fully without teaching the patient how to play a part in his own recovery and how to avoid a recurrence. After all, a patient becomes ill in his home or work surroundings and not in the hospital and hospital care is often only a short episode in a long life. It should not be the only part of a patient's life that nurses are taught about.

With the growing importance and the rapidly enlarging field of public health and preventive medicine and the difficulty of obtaining suitable nurses for this work, it is being regarded as a matter of urgency to give particular consideration to the public health nurse concerning her selection, her training, the scope of her work, and her status in the community.

A note on studies and experiments already being carried out in this connection will be referred to in succeeding paragraphs.

The survey of the causes of wastage among student nurses in Queensland hospitals has continued throughout the year with the active co-operation of the matrons and administrative staffs of hospitals and it is now possible to present a table of information (Table CXIV.) relating to wastage which might form a basis for further research into this problem which has economic as well as professional aspects.

The Adviser again gave advice and assistance to the Matrons' Association at their Conference and to individual matrons throughout the year and also assisted the public health nurses in the formation and development of their own Association.

PUBLIC HEALTH NURSING.

Public Health nursing has been defined by one British authority as including "all forms of visiting and district nursing as well as the more specialised forms of the work whether carried on under the auspices of public or private bodies. Nurses giving bedside care (in the home), school nurses, industrial nurses, nurses doing tuberculosis, child welfare, mental hygiene, or venereal disease work, are all broadly termed public health nurses."

The selection of the nurse for work in the public health field requires even greater care than selection for work in hospitals, as she operates very largely on her own and without close supervision.

Dr. Stephen Fleck, in the American Journal of Public Health, has pointed out that the nurse functions as the eyes and ears of the health services. She must observe, collect and evaluate a considerable amount of information in the short period of time covered by a home or clinic visit and not only record the information for her own authority as the hospital nurse does but must make effective contact with other medical or social services who may assist in dealing with the problem. All this needs quite a different approach from dealing with patients in hospitals or private case work.

The public health nurse needs a well-balanced personality, must be pubic-spirited and have a marked capacity for establishing good human relations. She must be an able team worker, an accurate observer and be capable of teaching either individuals or groups. It follows then that she must develop skills which have no relation to the basic nursing and technical procedures which form the major part of hospital work, although she must have a knowledge of these also.

Methods of attracting suitable nurses to work in the public health services is a matter which is receiving considerable attention in many countries. It is considered that their standing must be improved amongst the public and the medical and nursing professions and greater scope for advancement must be considered. At present, hospital nursing provides for greater scope to the nurse with special qualifications than does public health nursing. It will become increasingly necessary to attract to this vitally important work the young, enthusiastic and highly skilled nurse needed to make a success of it.

SURVEY ON WASTAGE OF STUDENT NURSES.

As a preliminary to building up a table of figures for inclusion in this report the survey on wastage and its implications was discussed with the General Matron of the Brisbane and South Coast Hospitals Board, the Matrons of the Brisbane Women's Hospital and of several of the larger country training schools. Matrons were to be asked to submit, not only details of student nurses discontinuing their training but also an annual report showing numbers of student nurses admitted—new and on transfer from other hospitals, the number of student nurses enrolled in each year of training, the results of examinations and lists of students' names. During these discussions the suggestion was made that, as reports from hospitals to the Nurses and Masseurs Registration Board are for the calendar year January to December it would be easier for the officers involved in sending returns as well as more accurate from the standpoint of the actual training of nurses if this period could be used in assessing wastage of student nurses. This was agreed to and the figures in Table CXIV attached cover the calendar year 1957 instead of the financial year 1957-58.

There is very little difference in the total wastage figures between the year under review and the financial year 1956-57 which was the basis of last year's report. The trends to which attention was drawn in that report are still very noticeable. For example, the older age groups have as high or higher wastage rates than the 17-year-old group which is the usual age at which training is commenced. The figures covering the preliminary educational standard reached by student nurses discontinuing their training would again appear to refute the argument often put forward that the wastage rate of nurses with the minimum educational standard is likely to be higher than in the case of nurses entering training with educational standard up to senior. There were 210 nurses with secondary education from sub-junior up who resigned or were retired from training against 289 of eighth grade standard. Since the number of students commencing with an eighth grade only is likely to be greater than those with some secondary education the wastage of nurses in the last-named group would appear to be proportionately higher than in those with a minimum standard. It is to be noted also that only 26 nurses at all hospitals discontinued their training because of failure in examinations, the smallest number in any category of wastage figures.

Marriage, taken as a total, shows second highest as a reason for nurses not completing training but it will be noted that individual figures show this to be the case only in country hospitals and for the most part in the smaller ones.

The larger proportion of the hospitals (38) have either no retirements on the grounds of unsuitability for nursing or else one only, and loss from this cause is definitely higher in the larger hospitals. It is possible that the student staff for smaller hospitals can be selected with more care and from a teen-age population having greater stability, and that more personal instruction is possible when the new nurse is introduced to the actual work of nursing in the wards and departments.

Resignations for "personal reasons" or "domestic problems" are given as separate totals although interviews show that the illness of a relative, whilst in some cases an authentic reason for a student nurse resigning, in other cases is used as an excuse to leave a hospital where a nurse is not happy.

Home sickness continues to account for a proportion of wastage and in this connection it is noted that country girls more easily become homesick in large institutions especially if they are a long distance from their homes. They are usually willing to continue their training at a smaller hospital nearer home.

Attention is again drawn to the number of nurses listed as discontinuing their training for health reasons, thus giving the impression that nursing has an adverse effect on the physical or mental health of the young girl. It is suggested that if this point is to be proved or disproved the records kept of physical or other examination by medical staffs of hospitals in respect of applicants for nurse training should be a good deal more comprehensive than they are. A pro forma in this connection has been submitted previously. To sum up:—it seems definite that nurses in Queensland do not discontinue their training to any marked degree because of inability to pass examinations and that groups with preliminary education above the minimum standard required discontinue their training in probably greater proportion than those with the minimum only. Excluding marriage which in any occupation open to women must always be allowed for as a possible source of loss to the occupation, the largest proportion of nurses cease training for reasons which should be, to a considerable degree, preventible

The response to letters from the Division of Nursing offering help and advice to girls who had discontinued their training for reasons other than marriage and whose hospital reports were good has been better than in previous years and an increased number of girls living in or within reach of Brisbane have requested interviews to talk over their problems. Some of these have requested advice and assistance in transferring to other hospitals to complete their training. All who responded, even though they had decided against resuming a nursing career, expressed great appreciation at having someone take an interest in them and their difficulties, thus demonstrating the need for work of this kind amongst young student nurses. It has been encouraging to have visits from several nurses who earlier had advice or assistance in transferring to other hospitals and who called to report the successful completion of their training and to ask for further advice in planning careers.

Planning for Research.

In order to develop a tentative plan for using available information as a basis for research into the problem of wastage in nursing, discussions were held with officers of the Research and Guidance Branch of the Department of Education and various suggestions were made by these officers. It was pointed out that officers of Research and Guidance have interviewed most of the children from Brisbane State Schools in connection with their future careers and if research could be commenced in respect of one hospital—for example the Brisbane Hospital, a basis for study already exists at the Branch particularly with respect to general intelligence and suitability for a career such as nursing.

Because the nurse who does not complete her training is an economic loss to her hospital as well as a loss to the nursing profession it would be an advantage to base some definite research on the material now available so that the causes of wastage could be surveyed.

Salk Vaccination Campaign.

The Adviser in Nursing continued throughout the year as a member of the Administration of the Salk Vaccination Campaign and was concerned with the staff planning necessary to separate the work of the Campaign from that of the School Health Services when these resumed normal duties in February, 1958.

Public Health Orientation Course—School Health Sisters.

During the Salk Vaccination Campaign a number of sisters had been appointed to fill vacancies which had occurred on the permanent staff of the School Health Services. When the resumption of school medical work was planned these sisters were brought to Brisbane to receive the usual period of in-service training in School Health work. However, after discussions between between the Chief Medical Officer of the School Health Services and the Adviser, together with the senior sisters, it was decided that the work of the School Health sisters would benefit by an orientation course in the wider field of general public health before commencing instruction in School Health work proper. The course planned included instruction in the development of public health services including those of Australia and Queensland, together with lectures, films, group studies and discussions and visits to all organisations concerned with the care and guidance of children, normal and handicapped. The permanent senior sisters in Brisbane were allowed to attend the course. During an assessment of the course conducted at its conclusion the senior sisters expressed a firm conviction in the value to their work and the widening of their interest by participation in the course and suggested that a similar programme should be arranged for all sisters appointed to the Service and should also be used as a refresher course for sisters who had been a number of years in the Service, especially in country districts.

The Adviser in Nursing assisted in planning the Course, collected the material for the instruction in the development of public health services and took part in the teaching programme, and also attended as many visits and sessions as possible with the sisters in order to assess their response to different types of instruction.

College of Nursing Australia—Short Post-Graduate Course in Public Health Nursing.

The College of Nursing, Australia, with headquarters in Melbourne arranged a short post-graduate course for public health nurses from 29th July to 23rd August, 1957. The only nurse from Queensland who attended was Miss Lyle McCulloch, one of the senior sisters in the school Health Services.

Subsequently a talk on this Course made by Miss McCulloch to a large gathering of nurses employed in the Queensland Public Health Services resulted in the formation of an educational group to be known as the Queensland Public Health Nurses' Association.

Annual Conference of the Matrons Association.

This Conference was held in Brisbane from 26th to 30th May, inclusive and attracted an attendance of 76 matrons, the largest number to attend a Conference since the formation of the Association. The Conference was officially opened by the Minister for Health and Home Affairs.

Instead of the usual study days covering different types of nursing the matrons had been requested by the Minister to make a study of existing curricula for general and midwifery nurses and present their suggestions for its revision. During the year the Adviser assisted the President of the Association with suggestions as to methods by which opinions of matrons all over Queensland might be obtained and collated prior to the Conference and also provided reference material from other States and countries when required. At the Conference itself she assisted with information and the formation of study groups designed to consider the provisional curriculum drawn up by the President from the suggestions received. The final draft of the suggested curriculum was presented to the Minister on Friday, 30th May, together with resolutions agreed to by the Conference.

In addition to work on the curriculum it was arranged for as many matrons as wished to attend for a morning session at the Brisbane Women's Hospital when excellent films on the delivery of a breech presentation and a caesarian section were shown, followed by a talk by the Medical Superintendent on neo-natal infection.

The remainder of the Conference members paid a visit by invitation to the Mount Olivet Hospital for the incurably sick and dying.

The Matron of the Brisbane Chest Hospital gave a talk during one evening on the diploma course in Nursing Administration which she recently undertook at the College of Nursing Australia and a discussion followed on post-graduate nursing education in general. These sessions were much appreciated.

As usual during Conference week many matrons took the opportunity of discussing their problems with the Adviser or asked for information re nursing matters or advice regarding courses of action in particular situations. In response to many requests from matrons who have to be their own hospital dietitians for a book on diet therapy the Adviser obtained from the Nutrition Section of the Commonwealth Department of Health sufficient copies of the recent publication "Notes on Special Diets for use in Hospitals" to supply all matrons who needed one. Matrons expressed appreciation of the usefulness of the publication.

Course in Civil Defence for Nurses.

The Adviser in Nursing was nominated to attend the first study period for nurses conducted at the Australian Civil Defence School, Macedon, Victoria, from 12th to 16th August, 1957.

It was pointed out that in the event of war the nursing services will have an important role to discharge in connection with Civil Defence and it was therefore highly desirable that the Adviser should be afforded an opportunity of obtaining the latest information and instruction as to Civil Defence.

On her return from the Course the Adviser presented to the Public Service Commissioner in his capacity as Officer in Charge of Civil Defence in Queensland the combined suggestions of herself and the two matrons who accompanied her to the School (Miss E. Spencer—Matron, Brisbane Women's Hospital and Miss E. Burbridge, Matron, South Brisbane Hospital) as to what could be done to prepare Queensland nurses for their role in any Civil Defence plan.

The plan of the Course and the material from which instruction was given together with suggestions on planning made to the officers of the School by the nursing students has been added to the reference material held in the office of the Division of Nursing.

Establishment of School of Nursing, Mental Hygiene Service.

With regard to the fact that the Adviser in 1955 at the request of the Director of Mental Hygiene conducted an investigation into the training of nurses in Queensland Mental Hospitals the Director asked the Adviser to accompany the newly appointed tutor-sister on her initial visit to the mental hospitals and discuss with her the training as at present carried out and the best way to re-organise the schools to effect an improvement in the future training of mental nurses. Reference material from other States and countries has been supplied to assist in planning.

Oration—New South Wales College of Nursing.

At the invitation of the New South Wales College of Nursing the Adviser delivered the Fifth Annual Oration of the College at the Investiture of Fellows in the Great Hall of the University of Sydney on 12th September, 1957.

Committee on Nursing, National Health and Medical Research Council.

The Adviser attended the fourth meeting of this Committee in the School of Public Health and Tropical Medicine, University of Sydney on 10th and 11th October, 1957.

TABLE CXIV.—WASTAGE OF STUDENT NURSES—QUEENSLAND HOSPITALS.

Hospital.	Student Enrolment.					Wastage of Students.						Total.	Per-cent-age of Total.	Age Groups.					Educational Standard					Reason given for Leaving.						
	1st.	2nd.	3rd.	4th.	5th.	Total Year, 1957.	1st.	2nd.	3rd.	4th.	Not known			17	18	19	20	21 and Over.	8th and Under.	Sub-Jnr.	Jnr.	Over	Not known	Not suited.	Fail in Exams	Mar-riage.	Per-sonal.	Health	Do-mes-tic.	Others **
Atherton	11	13	7	15	..	46	..	2	2	1	..	5	10·8	1	1	1	1	1	3	1	1	..	..	2	..	2	1	..	..	..
Ayr	6	4	..	7	..	17	3	1	2	2	..	8	47·5	2	3	2	1	..	8	..	..	..	..	2	..	2	..	..	..	4
Barcaldine	1	1	1	..	1	4	1	1	..	..	..	2	50·0	1	..	1	..	..	2	..	..	..	..	..	..	..	..	..	1	1
Beaudesert	5	3	1	2	..	11	3	..	1	..	..	4	36·3	1	1	..	2	..	4	..	..	..	..	1	1	..	..	1	..	1
Biloela	5	2	3	2	..	12	..	1	2	..	..	3	25·0	..	..	3	..	..	3	..	..	..	..	..	..	2	1	..	..	..
Blackall	3	2	2	..	..	7	..	2	1	..	..	3	42·8	1	2	..	..	..	2	..	1	..	..	..	1	2	..	..	..	..
Boonah	1	1	..	..	1	3	1	..	..	..	..	1	33·3	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..
Bowen	1	4	..	1	5	11	..	1	..	..	..	1	9·09	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1
Brisbane General Hospital	498	228	160	145	..	1,031	109	44	17	9	72	251	24·3	35	51	45	28	20	81	26	60	12	72	28	..	27	32	17	27	120
Bundaberg	10	11	22	22	..	65	14	8	4	2	..	28	43·07	3	2	8	6	9	13	6	9	..	..	..	3	9	1	1	5	9
Cairns	36	13	12	9	..	70	20	2	2	1	..	25	35·71	5	7	4	3	6	16	4	5	..	..	5	..	3	5	..	8	4
Charleville	5	5	7	10	..	27	1	1	..	..	..	2	7·4	..	1	..	..	1	1	..	..	..	1	..	..	..	1	..	..	1
Charters Towers	5	6	3	2	..	16	1	..	..	2	..	3	18·7	..	1	..	..	2	1	..	2	..	..	..	..	..	1	1	1	..
Chinchilla	10	2	5	4	..	21	1	..	2	..	..	3	14·28	..	1	..	1	1	3	..	..	..	..	..	1	1	..	1	..	..
Clermont	1	4	3	1	..	9	..	1	..	..	..	1	11·1	1	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..
Cloncurry	4	1	1	2	..	8	1	..	..	..	..	1	12·5	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	1	..
Collinsville	4	1	3	3	..	11	2	..	1	..	..	3	27·7	1	..	1	1	..	2	..	1	..	..	1	..	1	..	1	..	..
Dalby	9	2	1	3	..	15	5	3	1	..	..	9	60·0	..	3	2	3	1	3	..	1	1	4	..	3	1	3	1	..	1
Emerald	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gayndah	4	3	..	5	..	12	2	..	1	..	..	3	25·0	2	..	1	..	..	3	..	..	..	..	..	..	..	..	..	3	..
Gin Gin	3	2	..	..	..	5	1	..	..	..	..	1	20·0	..	1	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..
Gladstone	6	4	8	1	..	19	5	2	1	..	..	8	42·1	4	1	..	2	1	6	..	1	..	1	1	..	6	..	..	..	1
Goondiwindi	11	1	1	3	..	16	2	1	..	..	1	4	25·0	..	..	..	..	1	3	..	..	..	1	..	..	1	2	..	..	1
Greenslopes	14	10	6	1	..	31	4	5	..	..	..	9	29·0	..	..	4	3	2	2	1	5	1	..	..	..	6	..	1	2	..
Gympie	14	15	9	12	..	50	8	1	3	2	..	14	28·0	4	2	3	2	2	10	..	3	..	1	1	..	7	1	..	2	3
Herberton	6	3	..	1	..	10	2	1	..	..	..	3	30·0	1	..	..	1	1	3	..	..	..	..	2	..	1	..	..	..	..
Ingham	Infor	mation	not to	hand.																										
Innisfail	14	11	5	9	..	39	3	5	1	..	..	9	23·07	3	..	3	..	3	4	2	..	..	3	3	..	3	1	1	..	1
Ipswich	31	22	21	13	..	87	14	6	3	2	..	25	28·73	4	5	2	7	7	18	..	7	..	..	5	2	7	5	1	..	5
Isis-Childers	..	3	2	..	1	6	..	1	1	..	..	2	33·3	..	1	1	..	..	2	..	..	..	..	..	1	..	1	..	..	..
Jandowae	Infor	mation	not to	hand.																										
Kilcoy	5	..	..	1	..	6	1	..	..	..	..	1	16·6	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..
Kingaroy	8	9	7	7	..	31	..	1	1	..	..	2	6·45	..	..	1	1	..	1	..	1	..	..	..	..	1	..	1	..	..
Longreach	4	1	1	..	..	6	4	..	..	..	..	4	66·6	1	..	1	..	2	1	..	2	..	1	1	..	..	..	..	..	3
Mackay	18	11	2	5	..	36	10	3	3	1	..	17	47·2	1	4	5	2	5	11	1	4	1	..	3	1	1	2	..	3	7
Mareeba	4	10	5	6	..	25	2	..	1	1	..	4	16·0	1	..	2	1	..	3	..	1	..	..	..	..	2	1	..	..	1
Maryborough	25	22	9	18	..	74	15	9	3	1	..	28	36·36	2	10	6	4	6	16	2	6	1	3	3	3	8	2	..	1	11
Miles	4	..	2	..	..	6	4	2	1	..	..	7	116·7	3	2	..	..	2	4	..	1	2	..	..	..	..	..	..	1	6
Mitchell	1	..	..	..	..	1	..	..	1	..	..	1	100·0	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..
Monto	2	6	2	4	..	14	1	..	..	..	..	1	7·14	1	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..
Mossman	2	..	4	2	..	8	..	3	..	..	..	3	37·5	..	..	1	1	1	2	..	1	..	..	..	..	3	..	..	..	..
Mount Isa	7	2	2	4	..	15	..	..	1	..	..	1	6·6	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	1
Mount Morgan	5	..	..	..	..	5	1	1	..	..	..	2	40·0	1	..	1	..	..	2	..	..	..	..	..	..	..	2	..	..	..
Nambour	12	9	7	3	..	31	4	..	1	..	..	5	16·12	1	..	3	1	..	1	1	2	..	1	1	..	1	1	1	..	1
Proserpine	3	5	3	3	..	14	2	..	..	1	1	4	28·5	1	1	..	2	..	2	..	..	1	1	1	..	1	..	..	2	..
Rockhampton	23	25	9	14	..	71	8	5	2	1	..	16	22·5	1	5	5	4	1	14	1	1	..	..	3	..	3	2	..	2	6
Roma	12	4	3	3	..	22	4	..	1	..	..	5	22·2	1	..	2	1	..	..	..	1	..	4	1	..	1	1	..	1	1
Stanthorpe	6	3	7	6	..	22	2	..	1	..	..	3	13·63	2	..	1	..	..	2	..	1	..	..	..	1	..	..	1	1	..
Toowoomba	37	30	20	23	..	110	12	8	2	..	..	22	20·0	2	6	4	5	5	9	4	7	2	..	2	3	7	1	3	..	6
Townsville	43	34	21	30	..	128	19	1	2	..	..	22	17·1	3	11	4	1	3	14	2	6	..	..	4	3	2	1	2	1	9
Tully	4	3	3	3	..	13	..	1	..	1	..	2	15·3	2	..	..	..	..	2	..	..	..	..	..	..	2	..	..	..	..
Warwick	16	14	14	12	..	56	5	3	2	..	..	10	17·8	5	2	..	2	1	3	1	4	..	2	2	1	3	1	1	2	..
Wondai	5	4	5	5	..	19	..	2	1	..	..	3	15·7	1	1	1	..	..	3	..	..	..	..	1	2	..	..	..	..	..
Totals	965	569	409	422	8	2,373	297	128	68	27	74	594	25·0	98	127	119	87	84	289	52	137	21	95	73	26	118	71	36	65	205
Brisbane Women's Hospital	..	..	..	..	..	241	..	..	..	..	..	31	12·86	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

**Dissected as follows—

Transfer to another hospital	30	
Leaving the district	29	
Another position	10	
Dismissed	10	
No reason	8	
Homesick	7	
Does not like nursing	6	
Finds work too much	6	
Absconded	4	
Does not like large hospitals	4	
No wish to continue	4	
Miscellaneous	15	
		133
Plus Misdemeanours from Brisbane General Hospital		72
		205

Age Groups—not known—

Brisbane General Hospital	72
Goondiwindi	3
Kilcoy	1
Mitchell	1
Roma	1
Gympie	1
	79

LEGISLATION.

"The Sanitary Conveniences and Nightsoil Disposal Regulations of 1957" were gazetted on 23rd December, 1957. These were revised and amended Regulations of a similar title which had been in force since 1946. Some of the amendments were at the request of Local Authorities but most were made either to bring the Regulations into conformity with other legislation or to improve the safety of earth closets.

Due to the advances made in food production and processing by industrial chemistry, it was found necessary to bring the State's food and drug laws up to date. Consequently, a completely revised set of Regulations titled "The Food and Drug Regulations of 1957" was gazetted on 9th December, 1957.

A new set of Regulations entitled "The Health (Food Hygiene) Regulations of 1957" was published in the *Gazette* on the same day. The purpose of these Regulations is to ensure the hygienic handling, serving, wrapping and delivery of food for retail sale. The Local Authority is required to superintend, enforce and execute them.

It was found necessary, mainly because of the advances made in the last few years in milk treatment, to gazette an up to date set of Regulations which were cited as "The Milk-sellers Regulations of 1957." These were published in the *Gazette* dated 9th December, 1957.

During the year, amendments were made to "The Cafe Regulations of 1955," chiefly for the purpose of extending powers of licensing to more local authorities. These amendments appeared in the *Gazette* of 14th December, 1957.

An Act to control and regulate the possession, sale, transport and use of radioactive substances and the possession and use of certain apparatus capable of producing radiation was assented to on 7th May, 1958. This Act, cited as "*The Radio-Active Substances Act of* 1958" was published in the *Gazette* of 14th May, 1958. The Proclamation bringing this Act into force on 1st July, 1958, was dated 26th June, and published in the *Gazette* of 28th June, 1958.

ACKNOWLEDGMENTS.

I desire to express my thanks to all members of the staff for their unfailing and conscientious attention to duty. I would particularly mention my deputy who, during my absence overseas, carried out the extra duties required of him in his usual efficient manner; also Dr. P. R. Patrick who, in addition to the direction of the Salk Vaccination Campaign, carried out certain of the duties of the Deputy Director-General.

Thanks are again given to Government Departments for their co-operation, particularly the Under Secretary of this Department, the Department of Public Works, and the Government Statistician who as usual has been of great assistance in preparing the Vital Statistics Section of this Report and has supplied other statistical details from time to time throughout the year.

Members of the British Medical Association have again been most co-operative, particularly in assisting in the Salk Vaccination Campaign.

I would also thank the members of the Advisory Committee on Hospital Drugs and Surgical Appliances for their co-operation and I particularly thank Dr. A. D. D. Pye, General Superintendent of the Brisbane Hospital, for the assistance he has given during the year.

APPENDIX A.

THE HISTORY OF LEAD IN QUEENSLAND.

By E. M. Rathus.

The literature and references available on the problem of lead poisoning in Queensland, and most particularly its association with chronic nephritis, are indeed voluminous.

The first protagonists in this campaign directed towards the abolition of lead in paint used in situations easily accessible to children, were Dr. J. Lockhart Gibson and Dr. A. Jefferis Turner, both of whom appeared as authors of separate papers on lead poisoning in the *Australian Medical Gazette* of 20th October, 1897.

Dr. Lockhart Gibson's paper deals with observations dating from 1890, when he diagnosed his first case of lead poisoning in a boy aged five years. The symptoms were vomiting, wasting of thenar muscles, and bilateral wrist-drop in a thin child of poor nutrition. Toe drop was also present. After discharge from hospital, he improved, and the paralysis disappeared.

In 1891, Dr. Lockhart Gibson began to note the occurrence of wrist and foot drop among out-patients at the Children's Hospital, Brisbane. Plumbism was diagnosed, and two cases were presented before the Medical Society of Queensland as such. Much doubt was expressed, and the scepticism stimulated interest. So much so, that ten (10) cases were presented in a paper read before the Inter-colonial Medical Congress in Sydney in 1892.

The cases were described under the following classification :—

(1) Paralytic.

(2) Abdominal pains and pains in the limb.

(3) Eclamptic convulsions.

(4) Ocular neuritis—which included neuritis of the optical and oculomotor nerves—paralysis of the external rectus was invariable, and optic atrophy with blindness was recognised as due to plumbism.

The significance of a blue line on the gums was recognised and sought for. Nephritis and uremia were noted to occur.

The disease was known to be widespread, and though most cases were seen in Brisbane, cases from Charters Towers, Gympie and Southport were recognised. In six years, 76 cases were recorded at the Children's Hospital. Seven (7) of these died in hospital and others outside.

The etiology was discussed, and in this lies the only flaw in an otherwise very acute clinical assessment, lacking as he did, our modern methods of diagnosis. It was noted that most cases occurred as isolated units though occasionally several, or even all children of a family were affected. No adult was ever affected.

The sources of lead were discussed and the following were excluded: Sweetmeats, tinfoil, ginger beer, cooking utensils, jam in soldered tins, painted toys.

Soon it was realised that children discharged well, returned within twelve months with all the old symptoms. Dr. Turner called this "toxicity of habitation," and the drinking water was suspected. Tank water was then anlaysed by the Government Analyst and the first results were negative. But later, three specimens were found positive. Tank water as a cause of lead poisoning, therefore, was presented as an hypothesis, but the most important point made by Dr. Jefferis Turner was, in his own words, "Children in Queensland are suffering in no small number from a preventable form of poisoning. All I wish to prove is that a case has been made out for enquiry into its causation."

In the same journal appeared an article by Dr. J. Lockhart Gibson on "Ocular Neuritis" and "Some Unusual forms of Lead Poisoning" by Dr. T. E. Green. These three papers formed a symposium.

Salient points brought out by these acute clinicians consisted in the following:

From 1893 on, cases simulating basal meningitis were referred to Dr. Lockhart Gibson, all presenting with bilateral optic neuritis and paralysis of one external rectus. These cases never ended fatally, and Dr. L. Gibson began to doubt the diagnosis. Coincident with these cases, many cases of chronic lead poisoning were admitted, and in 1896 a case was admitted exhibiting both the ocular and other symptoms of basal meningitis and marked wrist and ankle drop. Another had a marked blue line on the gums together with the eye symptoms. This case is the first quoted as showing a trace of lead in the urine. On the theory previously noted, the tank water drunk by one of the worst cases was examined, and distinct traces of lead were found.

From 1891 to 1897, twenty-four (24) such cases of ocular neuritis were examined, their ages ranging from 4 to 8 years. Seven became quite blind. Unfortunately, Dr. L. Gibson in his peroration states, "Although we have been able to find lead in only three specimens of tank water examined, I am pretty sure that it is from tank water that the lead is obtained."

He again stresses, that, as a rule, only one child of a household is affected. The reason for this, of course, only became obvious in later years, but both of these papers are the overture to the concerted effort that followed to ascertain the cause of these numerous and tragic cases of lead poisoning in Queensland.

The cases described by T. E. Green would all be acceptable today as exhibiting the features of lead poisoning in children, embodying colic, constipation, convulsions, encephalopathy. Tank water was again suspected.

In 1904 Dr. Lockhart Gibson made his plea for painted railings and painted walls of rooms as the source of lead, as it was obvious that such sources were available to all children who lived in towns. In this article the first recognition of an obvious situation is made, and Dr. Gibson records his distress at not having realised it before. The tank water theory is discarded as untenable, particularly as lead was never found in the water except in three cases.

Some very exaggerated statements are made. For instance, the danger of absorption through the skin of the very soluble lead salts in paint, but a neat point is made of the fact that arsenic poisoning is well recognised to occur from the powder in rooms with green wall paper.

By 1917 Dr. Lockhart Gibson was able to state that recurrent attacks of lead poisoning in children can be prevented by warning the parents of the source of lead and by replacing lead with zinc white.

Dr. Lockhart Gibson firmly stated at this time (1917) that "it is at least up to those who doubt my conclusions to furnish a better explanation of the facts upon which a diagnosis is based, and to suggest a more possible source for the poison."

In 1922 the Queensland Branch of the British Medical Association endorsed the pioneer work of Doctors Turner and Gibson and regarded legislation as essential. They were critical of Dr. S. A. Smith's statements, subversive of their conclusions, made as a witness in the N.S.W. Board of Trade Report on White Lead, 1921. A perusal of Dr. Smith's evidence on pages 562 to 590 would not stand up to modern knowledge, as Dr. Smith states that inhalation is the important mechanism for absorption, and that turpentine produced the same destructive effects as lead.

He was entirely opposed to prohibition of the use of lead, and thought there was no danger from ingestion. Inter alia, he states that Dr. Gibson's investigations would not carry weight with a scientific body, and that no injury could come to children who ingested lead from painted railings, even if this were deliberately done, nor was there any need for a workman to wash his hands except from the point of view of ordinary cleanliness.

The Queensland branch of the British Medical Association pointed out that their concern was to establish the fact of lead poisoning among Queensland children, apart from any theories of causation.

However, the case was proved as far as Queensland medical practitioners were concerned, and though the breath of battle has surged for decades over the scene, research into the problem leaves one with little doubt that whatever Regulations one may see fit to impose on the use of lead in industry, the use of lead in any accessible or assimilable form in the home anywhere in the world is to be deplored.

In summer children's hands are sweaty and paint is powdery so that it will adhere more readily to their fingers. Of 85 cases of lead poisoning in the Children's Hospital, 42 had been admitted in the three hottest months (December to February), 28 during October, November, March and April, and only 16 in the five cooler months. Of 10 cases of plumbism in children, 8 were nail biters or thumb suckers. Of four in hospital, four bit their nails and one, aged 2 years, sucked his finger.

By 1929, Dr. Gifford Croll published a paper on the incidence of chronic nephritis amongst Queensland children. He found that the incidence of eclampsia in all stages was uniform and that acute nephritis showed a decided rise between the ages of 20-50, but that distribution was not otherwise remarkable. The supposition was that a number of cases of acute nephritis had been included in the returns obtained from the Registrar-General.

However, in the case of chronic nephritis he found the following evidence. Deaths for 800,000 of the population due to chronic nephritis were averaged at 425 for all States except Queensland, for the 10 year period 1917-1926. Here, 1,309 persons died of this disease before the age of 40, i.e., an excess of 884 cases. The peak occurred at the age of 30. No cause was attributed.

The following paper was an extension of that by Dr. Gifford Croll and is Dr. L. J. J. Nye's monumental contribution to this serious problem, later enlarged into his monograph "Clinical Nephritis and Lead Poisoning" published in 1933.

The observed differences in the cases in Queensland were:—

(1) The youth of the patients.

(2) The great majority gave no history of any definite illness, although they had been in indifferent health for some years.

Eighty cases collected from hospital records and from Dr. Nye's private records showed the following:—

42 cases .. .. no illness of note
38 cases .. .. 14 lead poisoning
5 measles
5 diphtheria
4 scarlet fever
3 pneumonia
2 pleurisy
2 appendicitis
1 typhoid fever
1 diphtheria and pertussis
1 jaundice

Plumbism at once became suspect.

A brief survey of the first series of cases showed that all children had spent their childhood in wooden houses in contact with chalky paint. Some were nail biters, and others thumb suckers. All were poorly developed, and in a few instances, another member of the family had been affected. All these cases had had definitely proved lead poisoning in earlier life.

The second series had never been treated for lead poisoning, nor had it been suspected. All these patients used to lick the raindrops from the veranda railings. All were anaemic and debilitated. All had chronic nephritis.

Nye's significant figures in support of lead as the causative agent were embodied in the following table:—

Percentages of Wooden (Painted) Houses.

Queensland	85 per cent.
Victoria	66 per cent.
New South Wales	48 per cent.
South Australia	8 per cent.

Deaths from Nephritis.

(10-40 years) for 100,000 of population.

Queensland	322
Victoria	108
New South Wales	102
South Australia	97

Lead carbonate and lead hydroxide formed the major constituents of all Queensland house paints for this very considerable period.

On an industrial level, an investigation into the incidence of lead poisoning at Mount Isa Mines was carried out in May, 1933, by Dr. J. V. Duhig on behalf of the Queensland Government. Prior to June, 1931, there had been only 8 claims for compensation (lead poisoning). In two years, these claims had amounted to 220. The peak incidence was rightly ascribed to the mining of the highly soluble lead carbonate ore in contradistinction to the sulphide.

As a result of this investigation, a Medical Board was constituted under an Enactment of Parliament in December, 1933. One of its functions was the diagnosis and investigation of lead poisoning. Dr. D. O. Shiels, both an able chemist and a doctor, was appointed Chairman, and produced several important papers while in Mount Isa. These concerned the determination of a level of lead excretion at which symptoms of compensatable degree were likely to occur, and an analysis of basophilia and its relationship to clinical lead poisoning.

In 1939, the School of Public Health and Tropical Medicine (University of Sydney) issued under the authority of the Minister for Health, its Service Publication Number 2, "Plumbism and Clinical Nephritis in Young People in Queensland," by Dr. R. Elliot Murray. Inter alia, the following facts were presented.

"In 1909 patients with plumbism admitted to the Brisbane Children's Hospital averaged 20 per year. Between 1917 and 1926, 428 patients were admitted, but in 1931-32, none could be found. It is to be noted that a steady decline occurred from 1922, and by 1939 severe cases were not occurring."

In all other countries lead poisoning is not known to be selective of children, adults being affected as frequently. The causes, of course, are protean. Only in Japan and Java, where white lead was used as a cosmetic, were several severe cases of lead poisoning known to occur in children.

In 1899, Dr. Hopkins made the first suggestion that the paint on fences, etc., provided the source of lead, during a discussion on cases presented by Dr. Jefferis Turner. Little notice was taken at the time, but in 1904 Dr. Gibson focused attention on the subject, and the tank water theory was on the wane.

Although other States and New Zealand possessed, and still possess homes painted with lead, cases do not occur and it became obvious that the climatological features of Queensland enhanced the opportunities for peeling and crumbling and ready accessibility of lead.

Dr. J. Julian Chisholm (1956) described 197 cases occurring in Baltimore children between 1952-1954 and his findings simply support this contention. All homes were old with crumbling paint, and all cases occurred in small children. As in Queensland, the majority of cases occurred in the hot summer months.

Dr. Chisholm had no doubt that crumbling paint on walls, door frames, fences were readily accessible to the hands and mouths of inquisitive small children. He points out that the amount of lead in the faeces of poisoned children exceeded that found in exposed industrial workers—(44 mg. lead/day as compared with 7·6 mg.).

Many experiments in Queensland showed that 1-2 mgms. of lead were easily obtained by rubbing crumbling paint with wet fingers.

The reason for the diminution in cases probably lay in the recognition of the condition, in increased public consciousness, and in the introduction of the Paint Regulations in 1922.

On Thursday, 28th September, 1922, the Health Acts Amendment Bill was introduced. Clause 29 of this Bill provides that "no paint containing more than 5 per cent. of soluble white lead shall be used within 4 feet of the ground or floor of any residence, hall, school or other building to which children under the age of 14 years have access, or any veranda, railing, gate, or fence. No surface paint which contains more than 5 per cent. of soluble lead shall be rubbed down in a dry condition." These provisions were not to be proclaimed before the 1st July, 1923.

In 1914, Breinl and Young at the Tropical Institute of Medicine of Townsville showed that the urine and faeces of children suspected of lead poisoning yielded positive results in 18 out of 22 cases.

A conference held in 1918 between the Queensland Branch of the British Medical Association and the Association of Employers in the Painting and Decorating Industry adopted certain rather ineffectual resolutions. These stated that painted surfaces within reach of children should be repainted every three years, and that a maximum of 60 per cent. of carbonate of lead and a minimum of zinc oxide should be used in such paints. Total prohibition of white lead was not called for.

A series of papers by Dr. D. A. Henderson appearing in 1954, 1955, 1957, and 1958, have retold the story, in a very detailed investigation embracing a follow-up of cases of plumbism, an analysis of chronic nephritis in Queensland, the lead content of bone in chronic Bright's Disease, and a final paper on the aetiology of chronic nephritis in Queensland.

In this latter paper, Dr. Henderson points out that no direct evidence that childhood plumbism was responsible for the high incidence of chronic renal disease in Queensland can be obtained to-day.

It may reasonably be accepted that the implementation of legislation in Queensland has been the effective masking agent, as exposure has been significantly reduced.

A few cases of lead encephalopathy occur every year in Queensland, and in every case the family had recently moved into an old house, or children had been born to families inhabiting such houses. In all these cases, the veranda railings, sills, and doors easily accessible to toddlers, have been found to be painted with a lead based paint of anything up to 50 per cent. lead. I have personal knowledge of three cases.

The manifest tragedy is worth combating, and nobody denies the baneful effect of lead in children as an acute or chronic poison.

Its etiology in nephritis in Queensland is a problem now accepted as solved, and generally it is felt that the disappearance of our tragic little actors from the scene is due to the courageous legislation passed and policed in Queensland with an almost evangelical zeal. Dr. Henderson's work, appearing 50 years after the first observations, appears to be incontrovertible, and chronic nephritis as a complication of childhood lead poisoning must be accepted as a clinical entity.

The proof of the theory involving lead as the cause of nephritis in young adults in Queensland is of a chronological and statistical character. If in 20 years time (or less), the incidence of this disease in young adults approaches or equals that in other States, the whole story must be accurate and all the efforts worth while.

In any event the banning of lead in house paints, toys and other situations remains a meritorious decree, and it is not too much to hope that all countries would do so.

Dr. J. Chisholm (1957) describes the severity of lead poisoning and encephalopathy in Baltimore and the frequency of the condition, whether or no subsequent nephritis is a complication. It is not enough merely to warn users on a label of the dangers involved in spreading lead paints within or upon the home.

On 14th January, 1956, white lead was totally abolished as a pigment, by an amendment to the Health Acts, 1937-1949. Only lead chromate was excluded to the extent that a paint may contain up to 5 per cent. lead chromate, and then only to be used out of reach of children up to the age of 14 years.

These sections of the Health Acts permit the Director-General to require, "That lead paint be removed from any prohibited part of a building (e.g. roof, furniture, veranda, railings, etc.). These sections are obviously put into effect when a case of lead poisoning is diagnosed in a child and lead paint is found in and about the house.

Other aspects of lead poisoning in Queensland concern public consciousness of the problem as a result of the efforts of those who had attempted to get lead paints banned on houses, and it is not surprising that the Operative Painters' and Decorators' Union of Australia (Queensland Branch) has issued a booklet on the problem. This booklet is based on the story presented in this paper, and presses for the total abolition of lead in paints, including red lead on metal work.

Since 1924 all buildings under the aegis of the Works Department have been painted with lead-free paints, but only in 1954 did the Railway Department follow suit as far as its wooden buildings were concerned.

Railway bridges receive a red lead primer in all cases. From observation and supervision, and the results of stipple cell counts, haemoglobin and lead excretion in bridge painters, excessive absorption of lead is not infrequent, though actual poisoning is, in my experience, rare.

I have no doubt that supervision of adults using lead in any form is a matter of education, and that the effect of lead in the adult not previously exposed to lead in any form, is different to that in children. From the literature this would appear to be only of a relative nature, and that toxic manifestations are possible, probable, and damaging over an extended period.

I have no doubt that the problem from a public health point of view, is different and must be considered in relation to the use of lead in industry as a whole, but that we would, none of us, in any case be any the worse off if lead was entirely abolished in paints.

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APPENDIX B.

ANNUAL REPORT OF THE NATIONAL MOSQUITO CONTROL COMMITTEE FOR 1957-1958.

Field and laboratory studies of Queensland mosquitoes continued, and many specimens were received for identification. Papers describing new species were published, and collaboration with workers elsewhere in the exchange, loan or discussion of specimens continued to prove of mutual benefit.

Dr. Marks was given permission to accept the offer of a travel grant for a systematic and ecological study of New Guinea mosquitoes, from the Bishop Museum, Honolulu (part of a grant to that Museum from the U.S. National Institutes of Health for work on "South Pacific insects of public health importance") and spent April 2nd-30th June in New Guinea.

1. Field Work.

The following list summarises the localities in which field work was undertaken:—Birkdale, 13-7-57; Camp Mountain, 28-7-57, 8-9-57, 16-11-57, 19-11-57; Tamborine Mt., 7-8-57; Bald Hills, 17-8-57; Woodford district, 28-8-57; Tibrogargan Creek and Caloundra, 10-9-57; Indooroopilly, 19-10-57; Upper Cedar Creek, 19-11-57.

Assistance was rendered to Mr. N. V. Dobrotworsky, Zoology Department, University of Melbourne, who is working on temperature tolerances of larvae of the *Aedes queenslandis* complex, by sending him three collections of living larva from pools at Tamborine Mt., Upper Cedar Creek, and also samples collected by Mr. I. C. Yeo in Lamington National Park.

2. Publications.

The following papers have been published during the year:—

Marks, E. N. and Rageau, J., 1957. *Culex pipiens australicus* Dobrotworsky and Drummond in New Caledonia. *Proc. Linn. Soc., N.S.W.,* 82:156.

Marks, E. N., 1957. The subgenus *Ochlerotatus* in the Australian Region (Diptera: Culicidae). I. Notes on classification, with the description of a new species. *Pap. Dep. Ent. Univ. Qd., 1* (*5*): 71-83.

The following papers are in the Press:—

Marks, E. N., and Hodgkin, E. P. A new species of *Aedes* (*Finlaya*) from Northern Australia (Diptera:Culicidae). *Proc. Linn. Soc., N.S.W.*

Marks, E. N., New species and records of the *Aedes kochi* group from eastern Australia (Diptera: Culicidae). *Proc. Roy., Soc., Qd.*

Marks, E. N. Notes on *Opifex fuscus* Hutton (Diptera: Culicidae) and the scope for further research on it. *N.Z. Entomologist.*

Marks, E. N., Mackerras, I. M., Lee, D. J., and Iyengar, M. O. T. Proposed use of the plenary powers to validate the specific name gracilis Theobald, 1905, as published in the combination *Bironella gracilis* (Diptera: Culicidae). *Bull Zool. Nomencl.*

3. Laboratory Studies.

In addition to work on the papers listed under publications, some of the figures and descriptions have been completed for a second paper in the series on subgenus *Ochlerotatus.*

A joint investigation has been undertaken with Dr. J.-M. Klein of Institut d'Enseignement et de Recherches Tropicales, Bondy, France, into the correct identification of two mosquitoes from the Australian region described by Macquart in 1950, the types of which are in the Paris Museum.

At the request of Mr. P. F. Mattingly, of British Museum (Natural History), an attempt was made to obtain a pure culture of the dark form of *Aedes aegypti* previously recorded by Hill from Townsville. About 200 specimens were reared from eggs collected by Dr. M. J. Mackerras at Innisfail in September but this proved a mixed culture of dark and pale forms. As the pale form is thought to breed mainly in domestic habitats, and the dark form to breed also in treeholes, a request was made to Mr. W. Mumford, Chief Health Inspector, Townsville City Council, for samples from treeholes in Townsville Botanic Gardens (where *A. aegypti* was found breeding in 1952). Mr. Mumford sent two series of treehole collections, one in October and one in February but in neither case was *A. ageypti* bred from them.

Approximately 230 slides have been prepared for microscopical study. As opportunity offered, work has been done on a joint paper with Dr. M. J. Mackerras on Australian Marine Chironomids.

Rearrangement was commenced of specimens in the cabinets to cope with the increasing size of the collection, and the whole collection of preserved larvae comprising about 1,000 tubes was checked and filled.

Work on the *Aedes kochi* group revealed that specimens from Lockhart River Mission were *Aedes wallacei,* a New Guinea species not previously known from Australia. Collections sent in by Mr. J. L. Wassell, Coen, included the previously unknown male and larva of *Aedes littlechildi* and the first record from the mainland of an undescribed *Aedes* previously found on Torres Strait islands.

Other studies included preparation of additions to the published key to *Tripteroides* by D. J. Lee, to cover species since described, or still undescribed. These modifications can be tested on specimens collected in New Guinea and have also been sent to Mr. S. H. Christian for trial.

A list of the mosquitoes recorded from New Guinea, stages known, type localities, habitats, etc., was prepared, in planning the itinerary for New Guinea.

4. IDENTIFICATIONS.

Many hundreds of specimens have been identified. Several undescribed species were included. Much of the material submitted for identification has been donated to this collection. Further valuable material and distribution records have been obtained, and the interest of the senders is appreciated.

Queensland.—Mr. J. L. Wassell (Coen district, 2 collections). Mr. M. Loveday (Crow's Nest, 2 collections, Bowenville, Gatton). Dr. M. J. Mackerras (Innisfail district). Mr. F. A. Perkins (Maryborough, Tibrogargan Creek, Clayfield). Miss M. Hawken (Yandina). Mr. A. May (Stanthorpe district, Toowoomba). Mr. J. T. Brooks (5 collections from Taringa, comprising over 250 specimens including daily catches, which have given a useful indication of the abundance of different species). Dr. J. Pearson (Toowong). N.Q. Naturalists Club (Cairns). Dr. T. E. Woodward (Heron I.). Mr. I. C. Yeo (Lamington National Park).

Other States.—New South Wales, Miss K. A. Walker (Coolatai). Victoria, Mr. N. V. Dobrotworsky. Northern Territory, Mr. A. K. O'Gower (Roper River Mission). Mr. F. W. G. Power (Darwin).

Elsewhere.—New Guinea: Mr. S. H. Christian (2 collections); Dr. W. Peters; Mr. R. W. Paine; Dr. D. Bonnet (a large collection taken on the Robinson-Peabody Museum Expedition to the south west Pacific). Netherlands New Guinea: Dr. J. van den Assem (2 collections). South Pacific: Dr. M. O. T. Iyengar (Cook and Tonga groups). Mr. D. J. Lee (Rotuma I.).

PUBLIC HEALTH.

Collections were received for identification through the Department of Health and Home Affairs from:—

Rockhampton City Council (3 samples);
Esk Shire Council;
Kingaroy Shire Council;
Murgon Shire Council;
Gympie City Council (2 samples);
Isis Shire Council;
Mackay Town Council;
Maroochy Shire Council;
Cairns Town Council;
Ipswich City Council (2 samples).

From Department of Agriculture and Stock:—Wavell Heights, Mount Isa, Mooloolaba, Woombye.

From the Hygiene Section, Amberley:—(A specimen of *Culex fatigans* taken from an aircraft from Fiji.)

1 Mob. Malaria Control Coy. (Three collections from North Queensland—these included an undescribed species of *Uranotaenia*.)

Mr. A. May's collection from Toowoomba showed *Culex fatigans* was plentiful there at the end of January.

6. EDUCATION.

Mr. Perkins—Questions and Answers on mosquitoes in the session "We are asking you."

Dr. Marks gave an address "Some Aspects and Aims of mosquito research in Australia" to the Papua and New Guinea Scientific Society.

Medicine IV. students were instructed in mosquito collecting and the specimens collected by them examined.

7. MISCELLANEOUS ACTIVITIES.

Type or paratype material of the new species described has been distributed to various institutions and loans, gifts or exchanges of specimens with other workers and institutions have been made.

Dr. D. H. Colless, of Department of Parasitology, University of Malaya, visited the laboratory for 3 days in order to study *Culex* species in the collection, and discussion with him of various problems of identification was helpful. Dr. Colless identified our specimens of the *Culex vishnui* group which he has recently revised. Other visitors were Dr J Smart, University of Cambridge, and Dr. Fideli del Rosario, Philippine Is.

Advice was given to a pathology laboratory on the rearing of mosquito larvae, and to the owner of an island in Moreton Bay on mosquito control.

8. LATE SUMMER MOSQUITO INFESTATION IN BRISBANE, AUTUMN, 1958.

The prolonged hot and humid weather up to the end of March allowed heavy mosquito infestation to continue longer than usual and there were many complaints in the Press.

The Committees records show that *A. vigilax* was breeding at Birkdale on 13th July and at Bald Hills on 17th August. Adults of *A. vigilax* were in pest numbers at Tibrogargan Creek on 30th August. A series of collections made by Mr. J. T. Brooks at Taringa, showed *C. annulirostris* and *C. fatigans* in July. *A. vigilax* predominated in 13 collections from 6th to 27th November, with a few *C. fatigans.* In 11 collections between 1st-18th December, *vigilax* occurred in 8 being plentiful up till 6th December, and on 18th, scarce between; *C. annulirostris* was present in 3, *C. sitiens* in 3, *A. annulipes* in 1, *A. notoscriptus* in 6, *C. fatigans* in 2, *C. pipiens australicus* in 1. In 4 collections between 15th and 30th January *A. vigilax* was again plentiful with *C. annulirostris* scarce. *A. vigilax* was present in 11 of 12 collections in February from 5th to 28th but in 6 of these there were equal or greater numbers of *C. annulirostris* and of *C. sitiens.* In 3 collections from 1st to 6th March *A. vigilax* was again predominant.

Mr. Perkins collected at Clayfield on 21st Nov. *A. vigilax* were in proportion 4:1 to *C. annulirostris.* On 26th March of a total of 373 mosquitoes collected at a veranda light included

209 *A. vigilax* (181 males 26 females), 114 *C. annulirostris* (93 males, 21 females), 43 *C. sitiens* (42 males, 1 female). On 27th March, a collection of 406 specimens included 224 *A. vigilax* (190 ♂, 44 ♀), 126 *C. annulirostris* (133 ♂, 13 ♀), 37 *C. sitiens* (124 ♂, 13 ♀).

The records show that *A. vigilax* was already abundant early in the spring and that apparently the prolonged dry season allowed a great build up in population. Absence of rain prevents the tidal pools being flushed out or joined to larger bodies of water from which larvivorous fish can enter them. High humidities are favourable to mosquito movement.

Numbers of *C. annulirostris* which was the major pest species in summers of heavy rainfall, have begun to increase as the late rains have increased the available breeding places.

These findings may be compared with those in the Committee's annual report for 1955-56 of autumn infestation in Brisbane in 1956, after an abnormally wet summer with similar catches when *Culex annulirostris* constituted 80-90 per cent. and only 4 specimens of *A. vigilax* were taken. *A. vigilax* was scarce early in the 1956-57 summer but numbers had built up by the end of the summer and allowed the current summer to start off with a high population.

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LEGISLATION

Legislation controlling poisons and drugs was brought up to date by "The Poisons Regulations of 1958" which were gazetted on 15th September, 1958. The number of schedules into which poisons and drugs were classified were increased in the new Regulations from five to eight, chiefly for the purpose of attaining uniformity with the other States in packing and labelling provisions.

A notification published in the *Gazette* of 9th December, 1957, extending the licensing provisions of Regulation 22 of "The Cafe Regulations of 1955" by applying section 113 of *"The Health Acts,* 1937 *to* 1955," to certain areas of Local Authorities, was cancelled by a notification which appeared in the *Gazette* of 26th July, 1958, and set forth a new Schedule of areas.

In the new schedule, the Local Authority area of the Shire of Kilkivan, which appeared in the previous schedule, was deleted and the additional areas of the Town of Gladstone and the Shires of Johnstone, Livingstone, Murgon and Proserpine were included. This schedule was amended by a notification published in the *Gazette* of 15th November, 1958, to include the Local Authority areas of Goondiwindi and the Shires of Blackall and Inglewood.

The Schedule was again amended by notification which appeared in the *Gazette* of the 16th May, 1959, to include the areas of the Shires of Albert and Booringa.

"The Plague Prevention Regulations of 1958" which were published in the *Government Gazette* of 20th October, 1958, replacing the 1954 Regulations of that title, included amendments suggested by Local Authorities for more effective control.

ACKNOWLEDGEMENTS

In conclusion I desire to express my thanks to all members of the staff for their help and their unfailing and conscientious attention to duty.

I would also thank my colleagues overseas who so generously helped me in my investigations into alcoholism, geriatrics, and other branches of public health. I would particularly mention Dr. Karl Meyer of the Hooper Foundation, University of California Medical Center, Sir Allen Daley, late Chief Medical Officer, London County Council, and Dr. Marjory Warren, Director of Geriatrics, West Middlesex Hospital.

Acknowledgment is made to the Agent-General for Queensland and his Officers for the assistance given me whenever it was asked for and to other Government Departments for their co-operation, particularly the Under Secretary of this Department, the Department of Public Works, and the Government Statistician who as usual has been of great assistance in preparing the Vital Statistics Section of this Report and has supplied other statistical details from time to time throughout the year.

Members of the British Medical Association have again been most co-operative, particularly in assisting in the Salk Vaccination Campaign.

I would also thank the members of the Advisory Committee on Hospital Drugs and Surgical Appliances for their co-operation and I particularly thank Dr. A. D. D. Pye, General Superintendent of the Brisbane Hospital, for the assistance he has given during the year.

APPENDIX B

ANNUAL REPORT OF THE NATIONAL MOSQUITO CONTROL COMMITTEE, 1958-1959

The work of the Committee during the year has included identification of specimens from many sources, field and laboratory studies, publication of research results, collaboration with workers on mosquitoes elsewhere, and an evaluation of larvicides for the Brisbane City Council.

Dr. E. N. Marks was granted leave to attend the A.N.Z.A.A.S. meeting at Adelaide in August and the opportunity was taken for field work and visits to other institutions en route.

1. Field Work

The following list summarises the localities in which field work was undertaken:—Camp Mountain, 20-7-58; Curlwa, S.A., 23-8-58; Ayer's Rock, Mt. Olga, Palm Valley, N.T., 1–10-9-58; Mary Kathleen, 12-9-58; Upper Kedron, 18-10-58; Bunya, 15-11-58; Heron Island, 16–19-12-58; Sandgate-Redcliffe, 28-1-59, 4-3-59; Tannymorel, Queen Mary's Falls, and Cunningham's Gap, 26–30-3-59; Kenmore, 16-5-59; Binna Burra, Lamington National Park, 25–29-5-59; Springbrook, 13–15-6-59.

Northern Territory: Three of the four species collected had not previously been recorded from the Territory, viz., *Culex pipiens australicus, Aedes bancroftianus* and a new undescribed species of *Aedes* (*Ochlerotatus*). New distribution records for *Anopheles annulipes* were obtained.

Mary Kathleen: With the collaboration of Mr. P. Stone, Cloncurry Shire Health Inspector, various sites were visited and collections were made at Rosebud Creek Weir and Lake Corella. *Anohpeles annulipes* was breeding at both places. Other species collected were *Culex pipiens australicus, Culex crinicauda* and a new undescribed species of *Culex*. The Company's spraying programme in the town should prevent development of a domestic mosquito problem.

Heron Island: An investigation was made at the request of the Chairman of the Great Barrier Reef Committee and accommodation was provided at the Marine Biological Station. There are no ground-water pools on this coral island. *Culex fatigans* was breeding in a variety of artificial containers round the machinery sheds, but was not found in old tins in the bush. Adults were taken in dwellings. This species had not previously been recorded from Heron Island and may be a fairly recent introduction. A sustained attack on its breeding places, particularly during the dry season, should eliminate it from the island. *Aedes notoscriptus* and *Tripteroides punctolateralis* were breeding in treeholes which abound in the *Pisonia* forest. Both have been recorded previously, and have probably been long established on the island; a few adults were biting in the bush, but presumably they feed mainly on the numerous birds.

Tannymorel: All stages of a new undescribed species of *Aedes* (*Finlaya*) were obtained. It was breeding in treeholes in a rather dry type of rain forest.

Lamington National Park: The main object was to collect additional material of an *Anopheles* which may be a new species or a variant of a described species. Collections from tree holes provided a good series of early larval instars of three *Tripteroides*. Two of these may be forms of the one species and the effect of the larval environment on development of certain characters is being investigated.

2. Publications

The following papers have been published during the year:—

Marks, E. N. (1958). Notes on *Opifex fuscus* Hutton (Diptera: Culicidae) and the scope for further research on it. *N.Z. Entomologist 2* (2): 20-25.

Marks, E. N. and Hodgkin, E. P. (1958). A new species of *Aedes* (*Finlaya*) from northern Australia (Diptera, Culicidae). *Proc. Linn. Soc. N.S.W. 83* (1): 33-39.

Marks, E. N. (1958). New species and records of the *Aedes kochi* Group from Eastern Australia (Diptera: Culicidae). *Proc. Roy. Soc. Qd. 59* (6): 57-74.

Marks, E. N. (1959). The subgenus *Ochlerotatus* in the Australian region (Diptera: Culicidae) II. Five new species from Western Australia. *Pap. Dep. Ent. Univ. Qd. 1* (8): 111-134.

The following paper is in the press:—

Marks, E. N. On two Mosquitoes of the subgenus *Finlaya* (Diptera: Culicidae). *Proc. Roy. Soc. Qd. 60.*

The above papers include descriptions of nine new species, for six of which all stages are described, and for three, females only; in addition the previously unknown male of another species is described.

3. A Preliminary Report on Field Work on New Guinea Mosquitoes by E. N. Marks, 1 April–27 June, 1958

This investigation was financed by a travel grant from the Bernice P. Bishop Museum, Honolulu, for work on the ecology and systematics of New Guinea Mosquitoes; salary and equipment were provided by the National Mosquito Control Committee; local car or boat transport was supplied by the Administrations of the Territory of Papua and New Guinea, and of Netherlands New Guinea. In both countries the work was done under the sponsorship of the Department of Health; in Australian territory, considerable assistance was also received from the Department of Agriculture, Stock and Fisheries, and the Department of Forests.

Of 220 species of mosquitoes recorded from New Guinea, larvae and breeding places of one-third were unknown. The primary aims of the investigation were to discover the breeding places and work out the life histories of species known only from adult specimens to collect from their type localities certain species which present taxonomic problems and to obtain distribution records from areas where little collecting had been done. Much information was also obtained on the ecology of other better known species.

Collections were made from 356 potential breeding places of which 21 treeholes or plant axils failed to yield larvae. One-third of the collections were from surface water of various types and two-thirds from natural and artificial containers. Fifty-seven collections of adult mosquitoes ranged from 1 to 89 specimens per collection. By isolation of immature stages 587 linked specimens were obtained; of these 262 are adults with correlated larval and pupal skins; 187 are adults with correlated pupal skins and 138 are pupae with correlated larval skins. By permission of the Commonwealth Department of Health several samples of living larvae were brought back to Brisbane for rearing.

Usually only tentative identifications were made in the field. A very conservative estimate would be at least 105 species collected, one new generic record for the Australian region, 10 new undescribed species, 8 new life histories of described species. In addition much new information on distribution was obtained. The collection comprises approximately 1,700 pinned adults and many hundreds of larvae. As opportunity offered specimens of *Ceratopogonidae, Simuliidae* and *Tabanidae* were also collected.

At Hollandia the mosquito collection made by Dr. J. van den Assem, Entomologist, Division of Malariology, was examined, and numerous specimens were loaned by Dr. van den Assem for further study. At Maprik some days were spent studying the very extensive mosquito collection of the Malaria Section and specimens were received on loan from it through Dr. W. H. Peters.

The following summarises the areas visited:—

PAPUA

Central District.—Port Moresby, Porebada, Brown River, Sogeri Plateau, 2nd–10th, 17th–19th April, 25th–27th June. 38 larval, 8 adult collections.

Northern District.—Saiho, 10th–17th April, 34 larval, 8 adult collections.

Southern Highlands District.—Mendi, 19th–20th June, 7 larval, 1 adult collection.

NEW GUINEA

Morobe District.—Lae, Bubia, Busu River, Bulolo, Wau, Edie Creek, Markham Valley, 19th–20th April, 29th May, 4th June, 9th June, 47 larval, 6 adult collections.

New Britain.—Hoskins, Rabaul, Keravat, Kokopo, 20th–25th April, 54 larval, 3 adult collections.

New Ireland.—Kavieng, Tigah area, Anelaua Island, 25th–29th April, 32 larval, 6 adult collections.

Sepik District.—Wewak, Maprik, Yambi, Pagui, Lumi, 29th–30th April, 15th–27th May, 28 larval, 7 adult collections.

Madang District.—Madang, 27th–29th May, 7 larval, 5 adult collections.

Eastern Highlands District.—Aiyura, Benaga, Kassam, Goroka, Daulo Pass, Kotuni, 4th–13th June, 20th–24th June, 41 larval, 2 adult collections.

Western Highlands District.—Wabag, Chirunki, 13th–19th June, 21 larval, 1 adult collection.

DUTCH NEW GUINEA

Hollandia Ifar, Sarmi, Mamberamo River, Pionierbivak, 30th April–15th May, 47 larval, 10 adult collections.

Generous help was received from so many persons that individual acknowledgment to all cannot be attempted in a brief report, but thanks are particularly due to Dr. H. N. White, and Dr. J. J. H. Szent-Ivany for arranging the itinerary, to Mr. G. Dun, to whose organisation the large collections in New Britain were mainly due, to Dr. J. van den Assem, in Hollandia, and Mr. J. Barrett, Aiyura, who took a full share in the collecting in their districts, and to Mr. Eibrink Jansen, Resident of the Hollandia District, who suggested and made possible the visit to Sarmi and the Mamberamo River.

4. LABORATORY STUDIES

From the material collected in New Guinea, 630 slides, mainly of correlated skins, have been made. Mounting of these skins is an essential preliminary to study of the adult collection, as identification of many species requires examination of adults, larvae and pupae. Selected specimens from this collection have been compared with material loaned or presented by Dr. W. H. Peters and Dr. J. van den Assem, who also are working on New Guinea mosquitoes. A large collection of New Guinea mosquitoes has been received on loan from the British Museum (Natural History) and will be compared with the material in our collection.

Another 50 slides were made of specimens from other sources.

Preparation of papers has continued. Work has been completed in the joint investigation with Dr. J. M. Klein into the correct identification of some Australian mosquitoes described by Macquart in 1850, the types of which are in the Paris Museum. The findings are being prepared for publication.

In August a day was spent at the School of Public Health and Tropical Medicine, Sydney, 1½ days at the Department of Zoology, University of Melbourne and ½ day at the South Australian Museum. Specimens in these collections were examined and problems discussed with other workers on mosquitoes.

Collaboration with other workers has continued in the exchange, loan or gift of specimens and in checking characters of specimens in our collection.

IDENTIFICATIONS

Many collections have been received and identified. These have provided valuable specimens and information. The following submitted specimens:—

Queensland.—E. Bernays (Dunwich); J. T. Brooks (Taringa, Jacobs Well, Logan Village, Capalaba, Victoria Point—8 lots, approximately 600 specimens); C. Buckley (South Molle I., Nundah); A. von Bujtar (Murrarie); H. Lavery

(Oonoonbah—3 lots); F. A. Perkins (Clayfield); S. Sekhon (Bunya Mountains); K. A. Walker (Goondiwindi, Tara); J. L. Wassell (Coen district—3 lots); P. Webb (Mt. Tamborine); P. R. Wilkinson (Amberley); G. L. Wilson (Kenmore); I. C. Yeo (Dunwich); 1 Mobile Malaria Control Unit (Cairns, Camp Mountain);

New South Wales.—E. Waterhouse;

Victoria.—N. V. Dobrotworsky;

South Australia.—R. Southcott;

Northern Territory.—D. McMichael;

New Guinea.—J. van den Assem (Netherlands N.G.—6 lots); J. Barrett (Bougainville, New Britain, E. Highlands); S. H. Christian (Minj—2 lots); R. S. McKenzie—Claydon (Goroka); C. D. Michener (Rigo); W. Wood (Misima I.);

New Zealand.—T. E. Woodward;

Wallis I.—J. Rageau.

Among the most interesting of these were—

1. The first record of the genus *Orthopodomyia* from Australia. Mr. Wassell collected a larva of *O. andamanensis* from a treehole at Port Stewart. This species occurs in New Guinea.

2. Mosquito larvae from the crops of wild ducks, collected by Mr. H. Lavery, Department of Agriculture and Stock.

3. The first specimens of *Theobaldia tonnoiri* in the collection, taken in New Zealand by Dr. Woodward.

6. SUMMER MOSQUITO INFESTATION OF BRISBANE

The past summer has been noteworthy for the absence of very large invasions of *Aedes vigilax* in the city. This was surprising as numbers were large at the end of of the preceding summer. The chief pest species has been *Culex annulirostris.*

Mr. J. T. Brooks has kindly continued his regular collections at Taringa, which provide a record from the beginning of mosquito infestation on 7th October until it ended on 24th May. These collections were made mainly indoors at light. In all 14 species were taken.

Aedes notoscriptus was regularly present in small numbers throughout this period.

Culex fatigans was also present throughout, numbers being greatest in late December and early January.

Culex pipiens australicus which feeds on birds and seldom bites man, was the species collected in greatest numbers in October and November. Numbers fell off in December and no specimens were taken between 18th January and 14th April, after which it appeared again in the collections.

Aedes vigilax was present on 10th October but was not taken again until 11th December. Numbers were small, but increased slightly towards the end of December. It was taken only twice between 31st December and 30th March (14th January and 4th March). The largest numbers of this species were taken from 30th March to 8th April, after which it was not collected. *A. vigilax* does not enter dwellings to the same extent as some other species, but when there are fairly large numbers about it is almost certain to be taken indoors. Its scarcity in these collections is therefore a good indication of the light infestation this season.

Culex sitiens appeared in collections from November to April but was never numerous.

Culex annulirostris was regularly present throughout the period. Numbers were low at first, building up slightly in January and February. There was a sudden large increase on 17th March and numbers remained fairly high until 15th April, when the invasion apparently ended. A heavy infestation with *C. annulirostris* was also shown in an indoor collection from Kenmore on 20th March by Dr. G. L. Wilson.

The large numbers of *C. annulirostris* compared with *A. vigilax* also appear in a collection of 217 adult mosquitoes taken at light at Clayfield between 8.00 and 9.30 p.m. on 8th February, by Mr. F. A. Perkins; this included 209 *C. annulirostris* (171 males, 38 females); 4 *A. vigilax* (3 males, 1 female) and 2 *C. sitiens* (males). These figures may be compared with those of similar collections in the Committee's Annual Report for 1957-58 when *A. vigilax* was predominant.

7. PUBLIC HEALTH

Collections were received for identification through the Department of Health and Home Affairs from:—

Cloncurry Shire Council
Dinmore
Emerald Shire Council
Esk Shire Council (5 samples)
Maryborough City Council

Advice was given to the Department of the Army regarding potential malaria vectors in the Mackay District; to the Chief Plumbing Inspector, Brisbane City Council, regarding mosquito breeding in septic tanks.

The Brisbane City Council was advised of localities from which *Aedes aegypti* had been collected by Medicine IV. students.

At the request of the Brisbane City Council, Mr. Perkins undertook a series of tests to evaluate larvicides which the Council submitted.

8. EDUCATION

Dr. Marks gave lectures and demonstrations to 1 Mobile Malaria Control Unit on Anophelene Vectors of Malaria in New Guinea and collection and mounting of Mosquito Larvae; a radio talk on Brisbane mosquitoes in 4QR Queensland Magazine and an interview on mosquito hunting in Dutch New Guinea in A.B.C. Women's Session.

Medicine IV. students were instructed in mosquito collecting and the specimens collected by them examined.

9. MISCELLANEOUS ACTIVITIES

Field collecting and laboratory techniques were demonstrated to Miss Chen, University of Taiwan, W.H.O. Fellow at the School of Public Health and Tropical Medicine, Sydney, who visited the laboratory for a day in January.

Dr. M. O. T. Iyengar, South Pacific Commission, spent a day at the laboratory in January.

Other visitors who are engaged on work connected with mosquitoes, were Dr. and Mrs. T. Spencer, Mr. S. H. Christian and Mr. H. Standfast of the Malaria Section, Public Health Department, New Guinea and Dr. B. McMillan of School of Public Health and Tropical Medicine, Sydney.

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